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## COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR TRUCK AND BUS FLEET OPERATORS



The swing is to Reo, from coast-to-coast. Reo's winning platform makes sense to truckers . . . bigger payloads because of Reo More-Load-Design and *Gold Comet* Power; lower maintenance and repair costs brought about by Reo engineering advancements such as replaceable wet-sleeve cylinders, and interchangeable main bearings; plus smooth, economical performance. Tell your Reo dealer you want to "meet the candidate" for an on-the-job demonstration.

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**the Senator says:**  
You can't beat the machine—if it's a REO! A vote for Reo *Gold Comet* power, gasoline or LP-gas, is a vote for true economy.



## "Our Dodge 'Job-Rated' trucks save us plenty of money!"

... says **LEONARD GORTER**, *Standard Cartage Co., Chicago, Illinois*

"We've been in the cartage business for more than 18 years," says Mr. Gorter. "And although we use several makes of trucks, we have more Dodges in our fleet than any other make."

"No matter what the load, we can depend on our Dodge trucks to come through! Why—we have one old 1945 Dodge that has never been out of service—never even had the head off. And our newer units already have thousands of miles on them and are still turning in top performance!"

"Because our Dodge trucks are 'Job-Rated' for our needs, we have found that they will handle our particular hauling jobs better than other trucks. Most important, our Dodges don't hold us up with break-



downs and, since trouble is expense, our Dodge 'Job-Rated' trucks save us plenty of money!"

Like so many other successful fleet operators, Mr. Gorter has learned that the extra value engineered into a Dodge pays off in extra operating and upkeep economy.

Consider a big Dodge 4-tonner, for instance. Its high-powered, high-compression engine gives you plenty of "go"—thanks to twin carburetion and exhaust system and other dependable Dodge advantages.

There's a lot more you'll want to know about economy-minded Dodge "Job-Rated" trucks. And there's a neighbor of yours who knows the full story. He's your friendly Dodge dealer—willing and able to help you.

# DODGE "Job-Rated" TRUCKS

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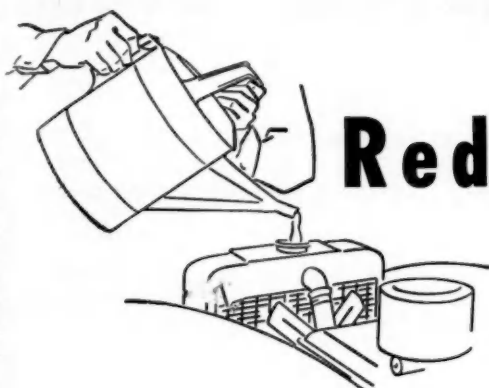
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## Reduces Highway Stops

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An overheated radiator can prove mighty troublesome and time-consuming on a lonely road. The regular use of Permatex Cooling System Cleaners produces efficient engine operation. Keeps radiators, water lines and jackets clean, thus prevents the most frequent cause of roadside delays. Use them in your shop. Put a package of Cooling System Cleaner in each truck for emergency use.

### PERMATEX COOLING SYSTEM CLEANERS

PERMATEX "COOLING SYSTEM CLEANER" package contains two products:

- (1) a non-acid powder cleaner that quickly removes rust, scale, grease and slime in one simple operation.
- (2) double action Radiator Cement that seals leaks and prevents the formation of rust.

PERMATEX "LIQUID RADIATOR CLEANER" is a fast acting acid. Completely dissolves rust and scale from the radiator, cylinder head and block. No inhibitor required. Reverse flushing is rarely necessary. Works where all others fail.

PERMATEX COMPANY, INC.  
Brooklyn 35, N. Y.

Two of over 50 Chemical Products for better  
Automotive Maintenance



★  
Ask your  
Jobber Salesman  
about the  
SPECIAL OFFER  
on these products.



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## Reduces Highway Stops

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### COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance

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**Adjusting the Auto-Life Regulator**

The Electric Auto-Life Co. provides a series of photographs showing step-by-step procedure for checking and adjusting the voltage regulator. This article provides an important guide which can be used by the mechanic in the shop. See page 63.

**White's Payload Procurement Plan**

White Motor Co. has instituted a Fleet Modernization Plan, designed to help operators 1. haul more payload consistent with state weight restrictions, 2. increase revenue by selecting equipment that will provide lower operating costs. The Payload Procurement Plan, outlined in detail here, is one phase of the program that can be adapted to any fleet. See page 60.

**Management—Key to Driver Testing**

Another Don Buck feature—this article covering management's responsibility in driver selecting and training will prompt many fleets to take determined action in selecting tests, in setting up testing procedures, in training men after they have been employed. Valuable information on sources of tests is included. See page 51.

**SAE West Coast Meeting**

Power steering for commercial vehicles is discussed in this first article excerpted from an SAE paper for your quick reading. Mr. Driver of Vickers, Inc., reviews three types of steering units, shows how they operate, and gives his views on advantages of each device. In the LP gas story, J. E. Glidewell, of Hall-Scott, outlined in detail the uses and advantages of liquefied petroleum gas as adapted to trucks. And finally Spicer and Fuller representatives list some important factors in transmission bearing life, in the third article from the SAE meeting. See pages 70, 71, 72.

**New Dairy Body Design**

Abbott's Dairies, Philadelphia, modify the regular Divco delivery body by 1. insulating the top, sides and bottom, 2. adding vacuum controlled doors between driver's compartment and cargo space, 3. improving flooring, load rails, drains, etc. Result is a longer lasting body, a 50 per cent saving in ice, good driver acceptance. Page 63.

**Retrospective Insurance**

Retrospective insurance premiums pay off for truck and bus operators with working accident prevention programs, wallop those with high accident frequencies. Pennsylvania Motor Truck Assn. panel discussion explains how the premium is calculated and what the operator should do to take advantage of this controversial type of insurance. See page 68.

To a fleet maintenance chief...  
who wants his carburetors  
rebuilt right!



Protect your rep as "the guy who knows how to keep 'em rolling". Make certain that every carburetor overhaul you turn out of your shop is a first-class job. How? By using Hygrade Fingertip Carburetor Repair Kits.

Hundreds of top fleet shop men do all their carb repairs in their own shops... and do 'em with HYGRADE kits. Here's why:

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Since even the finest mechanic slips up once in a while, clear step-by-step instructions are packed into every HYGRADE kit. Large exploded-view drawings and photos tie-in with the instructions to make each operation perfectly clear.

If you want to turn out rebuilds you can really have confidence in (and get some improved gas mileage reports to boot!) why not write for complete information about HYGRADE Carburetor Kits? HYGRADE PRODUCTS DIVISION, Standard Motor Products, Inc., Long Island City 1, N.Y.

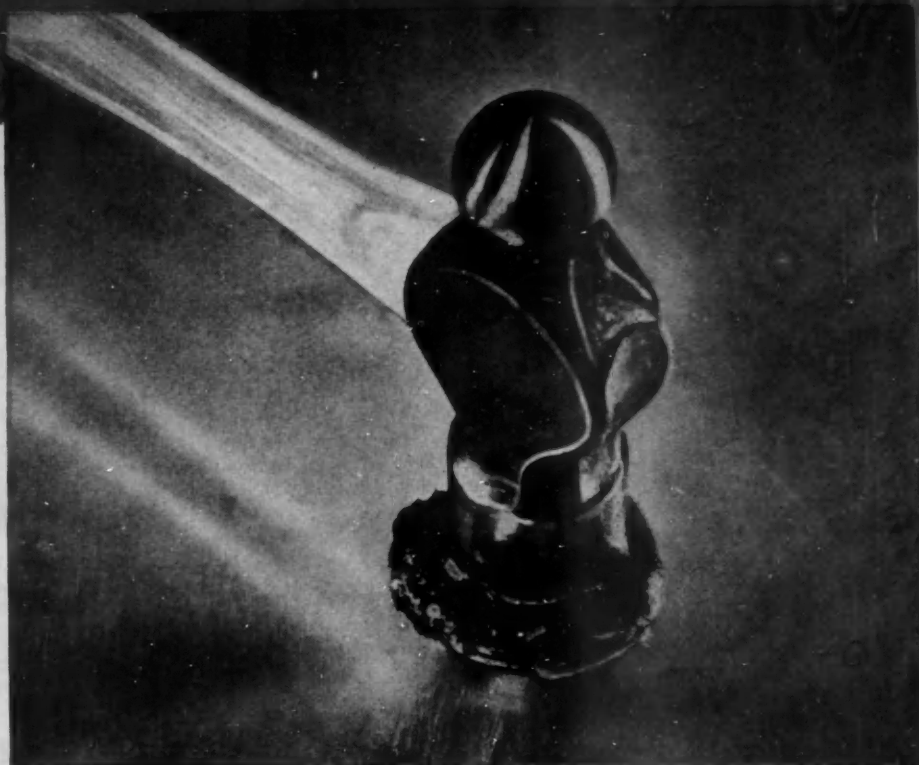
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# STRIKE THIS BLOW MAINTENANCE

**HAMMER TEST:** Put a lump of *Texaco Marfak* about the size of a walnut on a smooth, solid surface. Then hit it as hard as you can with a good-sized hammer. See how *Texaco Marfak* cushions your blow, does not splatter. That's because *Texaco Marfak* is both adhesive and cohesive. It clings to the surface and holds together — a dramatic demonstration of how it stays in the bearings and protects chassis parts under the pounding of the roughest service.



## See why chassis parts last longer with **TEXACO MARFAK**

Make the famous *Texaco Marfak* "Hammer Test" as described above. Note how *Texaco Marfak* cushions your hardest blows. The wonderful cohesive properties of *Texaco Marfak* prevent it from splattering like ordinary grease.

So it is in your chassis bearings. *Texaco Marfak* withstands the poundings of roughest roads . . . stays in the bearings for extra hundreds of miles . . . seals out dirt and moisture. *Texaco Marfak* stretches parts life because its tough, tenacious

lubricating film gives better and longer lasting protection against wear and rust. Your maintenance dollars go farther.

In wheel bearings, use *Texaco Marfak Heavy Duty*. It seals itself in, seals out dirt and moisture for longer lasting protection. Will not leak onto brakes. No seasonal change required.

### For Additional Economies

For engine economy, lubricate with *Texaco D-303 Motor Oil*. Fully detergent and dispersive, this oil

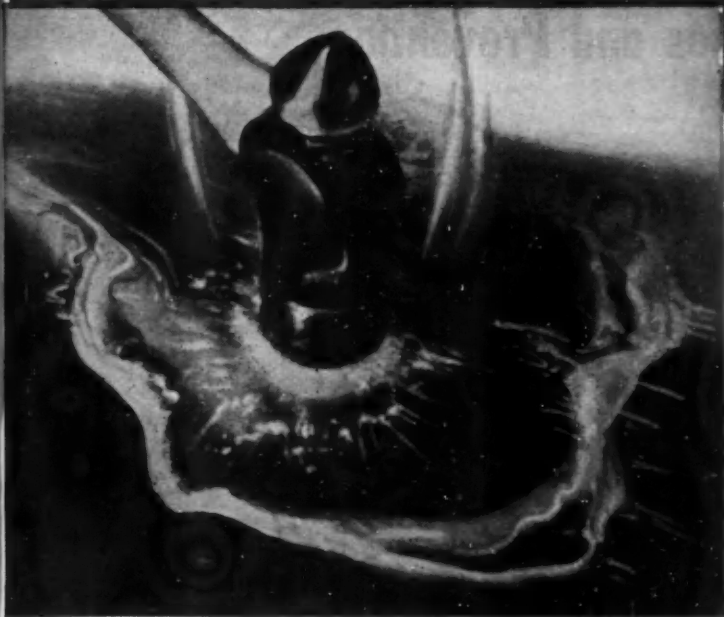
TUNE IN:  
On television —  
the **TEXACO STAR THEATER**  
starring **MILTON BERLE**.

See newspaper for  
time and station.



# TEXACO

# FOR LOWER COSTS . . .



**TRY** the "hammer test" with ordinary grease. Stand back and hit it! Note how it splatters, fails to hold together — proof that ordinary grease soon pounds out of chassis parts, leaves them unprotected, shortens their life. Fleet owners everywhere agree that *Texaco Marfak* gives the best protection under all conditions.

keeps engines clean, assures full power, less fuel consumption, lower maintenance costs.

Protect transmissions and differentials with *Texaco Universal Gear Lubricant*. It has outstanding EP characteristics, assures smoother operation, longer parts life.

Let a Texaco Lubrication Engineer help you simplify your maintenance lubrication . . . keep your fleet on the road and out of the repair shop. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

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MILLION POUNDS  
OF MARFAK  
HAVE BEEN  
SOLD!**

**Lubricants and Fuels**  
**FOR THE TRUCKING INDUSTRY**





# CONFERENCE C O R N E R

PRESENTING THE EXPERTS' VIEWPOINTS ON TIMELY SUBJECTS OF INTEREST TO FLEETS

## Bearing Failures—Causes and Prevention

By R. L. Wheeler

Chief Fuels and Lubricants Engineer  
General Machinery Division  
Gulf Oil Co.

When ball or roller bearings are installed in accordance with manufacturers' instructions, and are properly maintained and lubricated, their life expectancy can usually be predicted with a reasonable degree of accuracy. Except for certain high speed bearings, such as encountered in gas turbines, failure of anti-friction bearings is normally due to metal fatigue. Some authorities state that the fatigue life of ball bearings has been found to vary inversely as the fourth power of load and inversely as the speed. Therefore, if the load on a ball bearing is reduced one-half, its life is increased 16 times. Also if its speed is doubled, its life is reduced one-half. Thus, if bearings are operated at loads and speeds in excess of those for which they are designed, their useful life may be seriously impaired. Premature failure of anti-friction bearings may be caused by many factors. Some of the more common causes of failure are generally conceded to be:

- (1) Excessive loads and speeds.
- (2) Severe shock loading.
- (3) Misalignment. This may be due to inaccuracies in mounting, deflections due to insufficient support, settling of foundations, etc.
- (4) Damage to bearing through improper mounting procedures.
- (5) Insufficient clearance to take care of expansion or contraction due to temperature changes.
- (6) Entry of foreign matter into bearing, such as dirt, grit, rock or coal dust, etc., thus causing excessive wear. In this connection, cleanliness in storing, dispatching, and applying lubricants is extremely important. Small amounts of foreign or abrasive materials, which enter the lubricant through careless handling and storage procedures, are often the cause of abnormal bearing wear.

Excerpted from a paper published originally in "The Industry Spokesman"

- (7) Corrosion caused by water, acids, and other contaminants entering the bearing.
- (8) Electrolysis due to stray currents, etc.
- (9) Inadequate or improper lubrication.
- (10) Defective bearing materials or workmanship.

It is an old adage that "an ounce of prevention is worth a pound of cure." Also "preventive maintenance is cheaper than corrective maintenance."

As previously stated, lubrication failures are relatively infrequent and far too often the lubricant has been unjustly blamed for premature bearing failures. Therefore, careful study to determine the cause of the failure and then taking suitable corrective measures, generally pays handsome dividends through lower maintenance costs, and increased service time.

Equally important to the selection of the type and consistency of the lubricant is that of maintaining the proper amount of lubricant in the bearing. Too much lubricant causes excessive friction within the lubricant itself, due to churning. This is one of the common causes of excessive bearing temperatures and unsatisfactory lubricant performance. Insufficient lubricant may cause rapid wear and eventual bearing failure. Over-greasing, however, is generally more prevalent and causes more damage than under-greasing.

### Corrosion Prevention

WHILE the prevention of rust and corrosion is not primarily a lubricant function, it is a problem with which the lubricant supplier is often confronted. Sometimes, it is difficult to prevent the entry of water or other corrosive materials into the bearings or the lubricating system. The use of a suitable corrosion inhibitor in the lubricant has to a great extent been helpful in overcoming some of these corrosion difficulties. Certain types of lubricating greases are inherently good rust preventives. Soda soap greases for instance are superior to calcium soap greases in this respect. On the other hand, calcium soap greases have better resistance to water washing where large quantities of water are present. Therefore, careful selection of the lubricant is extremely important where operating conditions are such that corrosion troubles are likely to be encountered.



Here's the team that does it! The simple, handy Goodyear All-Purpose Battery Tester and the Fleet Battery Maintenance Card—all you need to save time, trouble, money!

# LOOK WHAT YOU SAVE

—with this  
**BATTERY MAINTENANCE TEAM**

**Cut road delays!  
Extend battery life!  
More service from  
all electrical components!**

**S**IMPLE and easy to operate, this plan will save you money—save you valuable time—and best of all, cost next to nothing to operate! Yet it guarantees you longer life from every battery you own.

All you need do is this: when your maintenance man waters batteries, he makes a quick test with the Goodyear All-Purpose Battery Tester and marks his findings on a separate Fleet Battery Maintenance Card for each battery. As long as these marks fall in the green-colored "safety zone" on the card, you *know* your electrical system is right.

This regularly kept record shows trouble on the way—lets you correct it before it happens. You'll

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And when you use this plan in conjunction with Goodyear heavy-duty truck and bus batteries, you'll save even more—so look into the plan today. Give it a trial—and see for yourself what this regular battery maintenance program will do for you. Mail the coupon for full details.

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and start saving!*

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Please show me how to save on Battery costs—with full information on the Goodyear Fleet Battery Maintenance Plan.

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Firm Name

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City  Zone  State

Number of Trucks in Fleet

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Auto-Lite Spark Plugs  
Patented U.S.A.

## ★ AIRCRAFT TYPE INSULATOR

Offers maximum resistance to heat and reduces fouling.

## ★ HEAVY ELECTRODES

Give longer gap life which contributes to lower service costs by requiring regapping less often.

## ★ RUGGED CONSTRUCTION

Especially suitable for the most severe bus and truck operation.

**N**O WONDER more and more of America's top fleets are switching exclusively to Auto-Lite Transport Spark Plugs. This rugged heavy-duty plug delivers lowest cost per mile of spark plug operation. Suitable for both LP and conventional fuel.

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# NSPORT SPARK PLUGS

*deliver  
the goods*



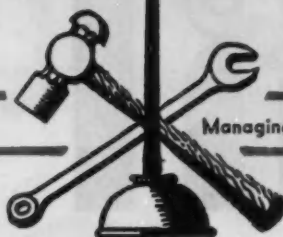
...and give  
**LOWEST  
COST  
PER MILE**  
of spark plug  
operation

You're Always Right With Auto-Lite

# At Your Service

By M. K. SIMKINS

Managing Editor, Commercial Car Journal



## Don't Gamble with Cylinder Taper

Be sure to check for cylinder taper before fitting new rings. This can be done by taking the inside micrometer reading at the unworn part of the cylinder (bottom) and subtracting the figure from that obtained just below the highest point in the ring travel.

Wear limits for taper must of necessity be general because of the variables in fleet requirements, the type of ring used, the nature of the service. However, most manufacturers agree that wear under .003 in. will usually accept new rings without serious trouble. In some cases where taper does not exceed .015 in. spring type rings will give satisfactory results. Expander sets can be used in up to 0.12 in. taper in cases where complete reboring is impractical.

Cylinder wear of this type is dangerous in terms of ring flutter. And ring flutter means improper seating. Scuffing and scoring of the cylinder walls will eventually result. For this reason most fleetmen seem to consider a rebore necessary when cylinder taper exceeds .005, irregardless of other factors.

## Watch Corrosion in Aluminum Joints

With the popularity of aluminum bodies in both heavy-duty trailers and the delivery truck field, a word of caution should be employed with regard to corrosion prevention. It is known, of course that two different metals in the presence of moisture will set up a galvanic current in the most active metal, resulting in a high rate of corrosion. Thus, moisture should be kept from all joints and rivets. This can be done by painting both sides of the aluminum sheet or part before riveting. Zinc chromate primer is good. Steel parts that come in contact with aluminum (such as rivets) should also be painted before fabrication.

## Restricted Mufflers are Costly

Restricted exhaust systems create back pressures that raise havoc with engine efficiency. Exhaust gases retained in the cylinder, increase the temperature of the intake mixture. Result is a substantial decrease in horsepower and excessive fuel consumption. Eventually valve burning and warping will be experienced. High piston head temperatures will accelerate ring wear and contribute to scored and scuffed cylinders . . . You just can't afford not to make systematic and timely

checks of the muffler and tailpipe and exhaust line in an effort to keep engine performance up to high standards.

Old mufflers with coaked compartments, flakes of rust or damaged cases are chief offenders to restricted lines. Bent exhaust pipes or restricted tail pipes contribute to back pressure and to some extent a coaked up manifold will restrict engine breathing. An engine analyzer, a dynamometer or an exhaust gas analyzer will show the condition of the exhaust system quickly. It is suggested that a good instrument be employed periodically to check up on the system.

## A Road Delay Should Be Passe

If there were degrees in maintenance given by the School of Experience, the mechanic with the best powers of diagnosis and treatment would probably be honored with "Doctor of Efficiency." And every man-jack in the outfit would address him as "Sir."

Unfortunately, however, we are not all emphasizing the accuracy and precision in maintenance that is actually required in these days of fast schedules and climbing operating expenses. Fleetmen generally agree that costs can be cut in PM routines . . . but as yet practically no one has the answer in maintenance efficiency.

Maintenance in any fleet is only as good as the mechanic, and the mechanic is only as valuable as his *productive* work. Far too often the good man wastes a certain percentage of his time on routine jobs that might not need his attention if the PM schedule were adjusted to the requirements of the operation.

Road failures do reflect in part the maintenance efficiency of the fleet. However, road failures are far too costly to use as measuring devices. If a transmission goes out at 75,000 miles, does that indicate that the next unit should be replaced at 74,500 miles? Over a period of time, maybe yes. But many other factors influence the life of any unit in the vehicle. Aside from operating factors such as driving, roads, loads, etc., there remains many other variables which can be placed in the lap of the mechanic or the man inspecting the vehicle.

Are you as a maintenance supervisor satisfied that your mechanics are holding close tolerances in over-

[TURN TO PAGE 14, PLEASE]

# 40,000,000 IN DAILY USE



Wherever you drive on the highways of America, more than 90 per cent of the cars and trucks you see rely upon AC Fuel Pumps for a steady supply of fuel.

More than 40,000,000 in daily service testify to the popularity of AC Fuel Pumps, among engineers and owners alike.

Since AC introduced the fuel pump, 25 years ago, more than 100,000,000 have been built, establishing an unparalleled record for reliability all over the world. There are none better.

# AC

AMERICA'S  
FIRST AND  
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# FUEL PUMPS

ORIGINAL  
EQUIPMENT ON  
9 OUT OF 10  
VEHICLES ON  
THE ROAD

AC SPARK PLUG DIVISION



GENERAL MOTORS CORPORATION



# Keep ahead with

from a single source...your Wagner



## REFILL...

### with Wagner Lockheed Brake Fluid

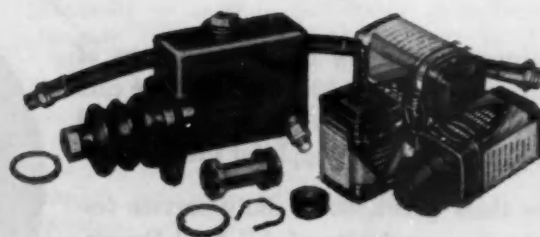
This high quality all-season fluid functions perfectly under all climatic conditions. It is *chemically balanced* so that it is not injurious to any part of the brake system. It maintains its chemical stability even under long, severe service. It surpasses S. A. E. specifications.



## REPLACE...

### with Wagner Lockheed Hydraulic Brake Parts

There's nothing finer. Genuine parts by Wagner—pioneer manufacturer of original Wagner Lockheed Hydraulic Brakes—assure perfect fit and dependable performance. Line is complete. It covers all makes of cars and trucks.



# Wagner

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NoRol • CoMoX BRAKE LINING • AIR BRAKES

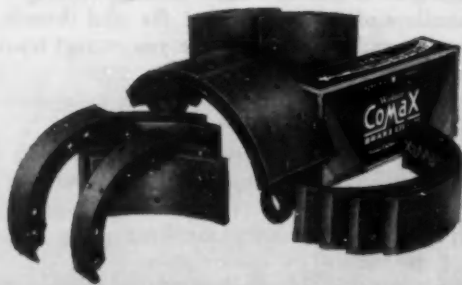
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jobber!



## RELINE... with Wagner CoMaX Brake Lining

It is unsurpassed for quick, safe, smooth stops. This long-lived lining of uniform, non-abrasive texture grips silently. It doesn't swell or compress. Available in bonded, riveted or drilled sets. Also in rolls, blocks, slabs, and cut segments.



...the best known  
name in brake service

TACHOGRAPH • ELECTRIC MOTORS • TRANSFORMERS

COMMERCIAL CAR JOURNAL, September, 1952



You're sure you're right when you use Wagner brake service products.

Wagner, the pioneer in the production of hydraulic brakes for automotive vehicles *knows* brakes and the importance of high quality replacement parts. You can always depend on Wagner products for good braking performance.

You can save time and money by looking to your Wagner jobber for *all* your requirements. You'll find that the Wagner Lockheed line of brake parts is the most complete on the market. For example, Wagner catalogs 696 different brake cylinders. No other line offers this kind of coverage all from one source.

For details, consult your Wagner jobber, or write us.

### Wagner Electric Corporation

6470 Plymouth Avenue, St. Louis 14, Mo., U. S. A.  
(Branches in principal cities in U. S. A. and in Canada)

You can depend upon **WAGNER QUALITY** because Wagner Products are used as original equipment by automobile, truck, and trailer manufacturers.

A52-4 C

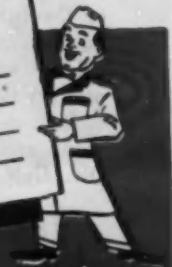
Please send me the latest Bulletins on Hydraulic  
Brake Servicing—HU-17H, HU-197.

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CITY \_\_\_\_\_



INDUSTRIAL CRANE BRIDGE BRAKES

# At Your Service

Continued from Page 10

haul? Are engines buttoned up with all specifications checked and rechecked? Is work being performed in areas and with tools that contribute to favorable working conditions? Is shop dirt contributing to some of your road troubles and short vehicle life?

And, finally, is your inspection supervised to the point where you are sure that rear axle is sound before replacing it? How do you really know that the bearings in the generator are worn to the point where they will permit shorting of the armature?

There are few shops where the quality of a man's work cannot be improved with continuous training, supervision and check up. Then after your men have been given a clean slate, check up on yourself to see if short cuts, new techniques or better quality parts won't add a few miles to those assemblies.

No static maintenance system will ever meet a fleet's need. A progressive approach to each new problem and a continuously evolving maintenance plan will pay off in longer vehicle life. It will take a great deal of study, some applied experience and a desire on every man's part to cut expenses.

You probably never can be sure that your PM plan is the optimum in efficiency, but you should be sure you are doing the best to improve upon last year's techniques. Your cost records will prove your progress.

## On Multi-Purpose Lubricants

To what extent multi-purpose lubricants will replace established sodium and calcium base greases for the lubrication of anti-friction bearings is at this time unpredictable. However, present indications are that there is a field for greases of the multi-purpose type, particularly where supervised lubrication procedure is lacking to such a degree that proper application of two or more greases would be difficult to maintain, or where some compromise as to lubricant suitability is permissible. It should be remembered, however, that where severe service conditions prevail involving high temperatures and high speeds, particularly where maximum resistance to oxidation is desired, the performance characteristics of conventional soda base and soda-lime base greases are still unsurpassed. For this reason, it appears doubtful that multi-purpose greases will, in the foreseeable future, entirely replace the better grades of currently established ball and roller bearing greases.

Since multi-purpose lubricants are relatively new, their ultimate performance characteristics and their possible field of application have not yet been fully explored. However, present indications are that greases of the lithium, barium, or strontium base type may find favorable acceptance for many applications, particularly where reduction in number of brands is of primary importance.—From "Maintenance Lubrication of Ball and Roller Bearings," by R. L. Wheeler, Chief Fuels and Lubricants Engineer, General Machinery Div., Gulf Oil Corp.

## Needed—Better Filters

It is unfortunate that air filtering is an art not a science, said Richard E. Brown, of the Air-Maze Corp. at the West Coast meeting of SAE. In the past there have been numerous patents taken out on the various

types of air cleaning devices. These patents that disclosed most of the basic ideas used today, probably predate the patents for the internal combustion engine. Recent patents and improvements deal entirely with adaptations of the same basic themes. The arts of designing and manufacturing a great number of items have advanced considerably more rapidly than the art of designing filters. In a number of instances the arts have progressed to sciences which we hope is what will happen to air filtration. There are a great number of possibilities to be investigated. Some of these that hold out hope for better engine air filters are: self charging electrostatic plastics with possible automatic washing; high efficiency centrifuging with external energy sources; or, ultra-sonic agglomeration of particles. It is hoped that the air filter manufacturers or any other interested parties will develop a better answer to problems of air filtration soon. When the day of reckoning comes to air filtration the engine users and builders will be able to fulfill their dreams by getting an engine air filter that removes all the dirt, doesn't occupy any space, doesn't weigh anything, doesn't have to be cleaned, and doesn't cost anything.



## What's Your Mechanical I. Q.?

As a mechanic, maintenance supervisor or fleet operator you probably have a definite interest in mechanical "stickers." Here are some hand-picked questions that will quickly show up your ability in things mechanical. If you can answer 8 of these questions correctly, you are about average. 10 correct answers rates you an excellent, and 12 puts you in the super-duper class. Answers will be found on page 199.

1. A heavy-duty oil fortified with a detergent will clean up an engine that is heavily sludged. ....
2. Lugging an engine can cause bearing failures. ...
3. Regardless of the condition of the stud threads, a torque wrench will always give you correct tension reading. ....
4. A feeler gage will give you accurate measurement of the contact point opening. ....
5. An operating oil temperature of less than 120 degrees will contribute to oil dilution and sludge formation. ....
6. A cracked booster pump diaphragm can be the cause of excessive oil consumption. ....
7. If the timing is adjusted carefully on the shop floor, a road test or a dynamometer checkup is unnecessary. ....
8. The dash temperature gage accurately records the temperature of the engine block. ....
9. A speedometer can be assumed to be up to ten per cent inaccurate at either end of the speed range. ...
10. When the battery specific gravity is below 1.225, more electrolyte should be added. ....
11. Metal build up on the positive contact point indicates an over-capacity condenser. ....
12. Weak valve spring can contribute to high speed engine miss. ....





ASSBURY SYSTEM  
4000 SOUTH ALAMEDA STREET  
LOS ANGELES 38, CALIF.

Champion Spark Plug Company  
Toledo, Ohio

April 2nd, 1952

Gentlemen:

Since the formation of our company thirty years ago, we have standardized in the use of Champion Spark Plugs.

Our fleet, composed of 700 units — including cranes, passenger buses, over-the-road and pipe line equipment — serves nine Western States and the Dominion of Canada.

We operate in the desert heat of California and Nevada to the opposite temperature extremes of the North — from sea level across the Continental Divide, carrying oilfield equipment, bulk petroleum products, general commodities and passengers.

You can readily see that versatility is one of our most important spark plug requirements. We have found, through the years, that Champion Spark Plugs meet every test of performance and dependability under these severe conditions.

Very truly yours,

*A. J. Eyraud*  
A. J. Eyraud,  
President.

ASSBURY SYSTEM • ASSBURY TRANSPORTATION CO. • ARROWHEAD FREIGHT LINES, LTD. • ASSBURY RAPID TRANSIT SYSTEM



**Where Versatility is Demanded  
You'll Find Champions On The Job!**



Standardize on **CHAMPION** for Your Fleet

CHAMPION SPARK PLUG COMPANY, TOLEDO 1, OHIO



New 12-S  
and 12-A

# Fuller TORQUE CONVERTER COUPLINGS

Operators now have at their command a new torque converter coupling for engines delivering maximum torque of 180-225 foot pounds. Fuller's new 12-A and 12-S converter coupling drives have proved highly successful in delivery trucks, fork-lift trucks, tow trucks, hoists, locomotives, loaders and other installations where start-and-stop, heavy load pickups are hard on engine, gears, drive lines, axles and tires, and tiring on operators.

Specify these advantages for your new and repowered equipment ... 2.1 to 1 torque multiplication ... elimination of shock loads and

stalling ... greater operator ease.

Available with *splined* output shaft (12-S) or with *flanged* output shaft and SAE No. 3 flywheel housing (12-A). Multiplication 2.1 to 1 at stall for smooth starting and hard pulling. Stator mounted on over-running clutch which permits automatic change to fluid coupling operation for economy in normal running. Maximum diameter of fluid circuit 12 $\frac{3}{4}$ ". Designed for engine speed of 2000-2200 and higher.

Ask for an analysis by our engineering department for your application, giving engine torque and hp. curve.

- SPEEDS WORK
- SMOOTHS POWER
- PREVENTS SHOCK
- PLEASES OPERATORS
- PRESERVES EQUIPMENT



FULLER MANUFACTURING COMPANY (Transmission Division), KALAMAZOO 13F, MICHIGAN

Unit Drop Forge Division, Milwaukee 1, Wis. • WESTERN DISTRICT OFFICE (SALES & SERVICE—BOTH DIVISIONS), 1060 E. 11th Street, Oakland 6, Calif.

# "Hauling steel tanks and plates . . . Only 4½¢ a mile runs my F-7 Big Job"

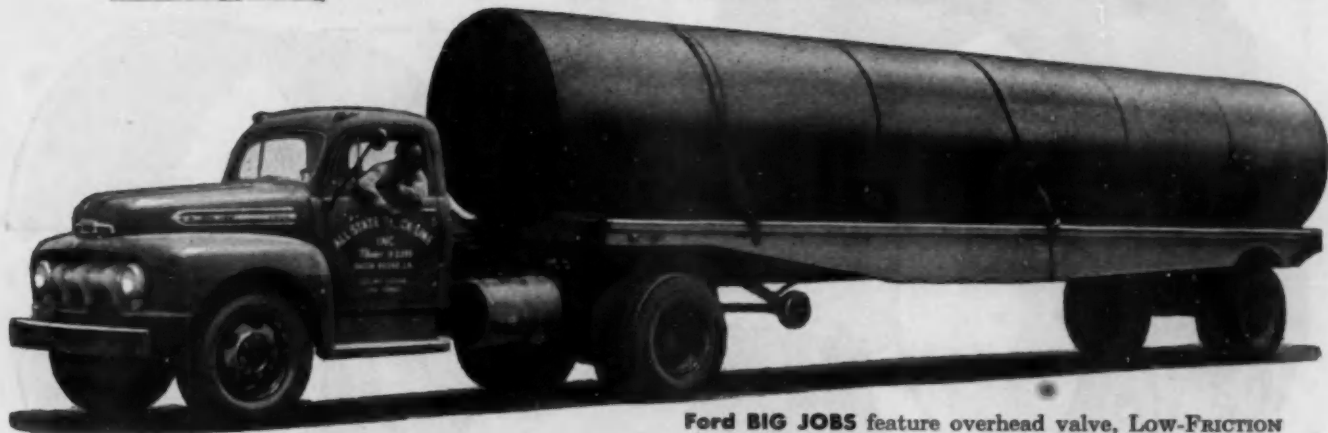


says R. E. Caire, Baton Rouge, Louisiana



LOUISIANA  
Report No. 11220

"With my Ford I can make three more trips per week," says Mr. Caire. "Extra trips mean extra payloads and better service to satisfy customers." Mr. Caire owns 5 Ford Trucks and entered his F-7 semi-trailer in the Economy Run. It traveled 27,964 miles, yet total costs for oil, gas and maintenance were only \$1250.57. That's just 4½ cents a mile.



Ford **BIG JOBS** feature overhead valve, Low-FRICTION Cargo King V-8 — 145 h.p. (F-7) and 155 h.p. (F-8).

## Now! Up to 14% more Gas Savings



Two years of testing show how well the new Ford Low-FRICTION engines perform under the most severe conditions. They passed scores of 100-hour "destruction" tests. One model alone ran as much as 50,000 dynamometer test-hours, over 500,000 vehicle test-miles.

**DON'T GUESS!** See how little it can cost to run a truck in your kind of work. See the cost figures in this 144-page book showing results from the 50-million-mile Ford Truck Economy Run. See it at your Ford Dealer's!

Availability of equipment, accessories and trim as illustrated is dependent on material supply conditions



## FORD TRUCKING COSTS LESS and FORD TRUCKS LAST LONGER!

Using latest registration data on 8,069,000 trucks, life insurance experts prove Ford Trucks last longer!

## and more Speed Hauling power, too!

New Low-FRICTION design in 3 new Ford Truck high-compression engines cuts friction loss!

Ford's Low-FRICTION design cuts friction power loss up to 30%! A new Short-Stroke principle reduces piston travel up to 20% — makes for longer engine life. New OVERHEAD VALVES give more efficient fuel-feeding. New HIGH-COMPRESSION gives extra power on regular grade gasoline.

You can get new Low-FRICTION design in 3 of the 5 great Ford Truck engines for '52. And you get more power than ever in the famous 239 cu. in. truck V-8 or the 254 cu. in. BIG SIX. See what's new in trucks at your Ford Dealer's!

### FREE! MAIL THIS COUPON NOW!

FORD Division of FORD MOTOR COMPANY  
3201 Schaefer Road, Dearborn, Michigan

Please send me without charge or obligation, complete details on the new Ford Trucks for '52 and the five great Ford Truck engines!

FULL LINE ☐ HEAVY-DUTY MODELS ☐  
LIGHT MODELS ☐ EXTRA HEAVY-DUTY MODELS ☐

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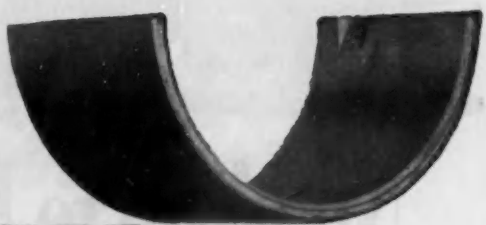
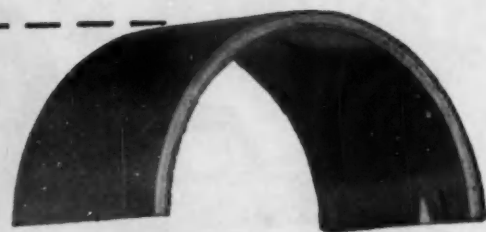
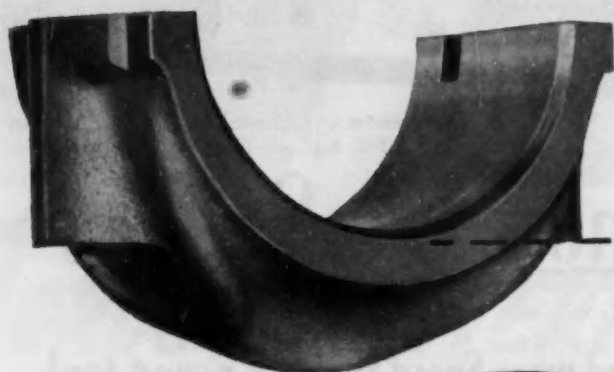
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# INCREASED ENGINE BEARING MILEAGE



**with the  
RIGHT BEARINGS  
in the RIGHT RODS**

Fleet owners throughout the country have proved the value of this combination:

- Federal-Mogul copper-lead bearings
- Federal-Mogul exchange insert connecting rods

Federal-Mogul gives you a *choice* of copper-lead alloys to meet your specific maintenance and operating conditions. And Federal-Mogul exchange service provides you with expertly reconditioned rods to go with the bearings.

It's a combination that assures extra heavy-duty mileage for fleet owners. Ask your Federal-Mogul Jobber!



Whatever your engine bearing needs may be, you'll find the right answer here!



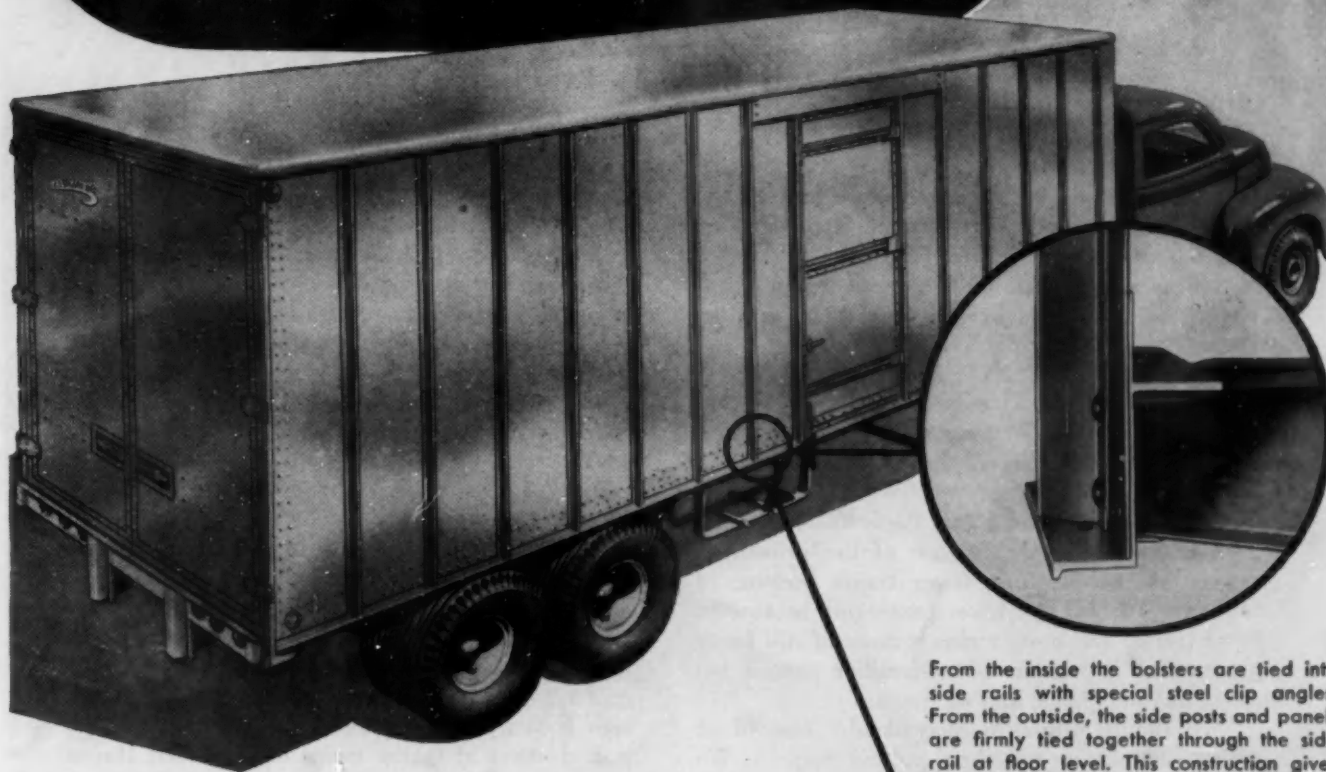
## FEDERAL-MOGUL SERVICE

(Division of Federal-Mogul Corporation)

DETROIT 13, MICHIGAN

Engine Bearings (Main, Connecting Rod and Camshaft) • Bushings • Connecting Rod Service • Exchange Insert Rods, Rebabbitted Rods • Connecting Rod Bolts and Nuts • V-Seam Piston Pin Bushings • Shims and Shim Stock

New TRAIL MOBILE Model "EP" Features  
**GIRDER SIDES**  
 for Extra Load-carrying Strength!



**New side construction gives the Model "EP"  
 its rugged strength**

The extra load-carrying ability of the Model "EP" (Exterior Post) Trailmobile is achieved through the use of a unique side rail design that ties the floor bolsters and side section securely together.

The load is transferred from the bolsters into the side sections which consist of heavy gauge alloy aluminum side panels firmly joined to the side posts and the top and bottom rails to form a continuous plate girder side structure that carries and distributes the load evenly throughout the entire trailer.

With all of its rugged, built-in strength, the use of aluminum alloy for the side panels, posts, roof, quarter panels and landing gear puts the Model "EP" in the light-weight class. See your friendly local Trailmobile dealer or write for complete details about the Model "EP" today!

From the inside the bolsters are tied into side rails with special steel clip angles. From the outside, the side posts and panels are firmly tied together through the side rail at floor level. This construction gives the Model "EP" its extra load-carrying strength, yet permits easy and quick replacement of posts, panels and bolsters.

*The Trend  
 is to*

**TRAILMOBILE**

**TRAILMOBILE INC.**

*Subsidiary of Pullman Incorporated*

Cincinnati 9, Ohio • Berkeley 10, California  
 Friendly Sales and Service from Coast to Coast

The

# OVERLOAD

E D I T O R I A L C O M M E N T

## A Railroad Refuses to Play Dead

AT one point during the summer we managed to sneak away for a few days in New England. It was a most enjoyable trip, largely by rail! That in itself is a rather unusual statement for an editor serving the truck and bus industry to be making, but wait till you hear the rest.

In the streamlined grill car we ordered a very reasonable (so help us) meal; then discovered that the menu was the center spread of a 28-page magazine called the *New Haven Railroad Travel Guide*.

The lead article was entitled "We Refuse to Play Dead." It began by analyzing the facts. There had been fewer passengers because of the growth of automobile travel; then fewer trains because of fewer passengers; still fewer passengers because of fewer trains; still fewer trains because of still fewer passengers. It was an all-too-familiar pattern but then came the punch, and we quote:

"We simply refuse to 'play dead.' Instead of taking off trains we have been putting them on. We are doing everything we can to speed them up, to make them more attractive and more convenient. . .

"We took the extra fare off the Merchants Limited and found the business increased so much we had to put on an extra Merchants! . . . This gave us eight four-hour trains, four in each direction, between New York and Boston; the best service ever between these two important cities."

The article went on to list several additional improvements including new fast service with the very best equipment on the Cape Cod run; special summer trains were started before Memorial Day instead of the traditional middle of June; additional branch line service to Danbury. A commuter train from New Haven was split into two trains, operating on a faster skip-stop basis, and nine new diesel com-

muter cars were added—one of them a specially designed Mack that runs on a branch that had not had passenger service since 1942!

Another article told how the last of the steam locomotives had been retired in favor of the more economical and more efficient diesel. Still others described new equipment in detail, from central control signaling to the Mack railcar.

All in all it was most refreshing reading. We couldn't help but contrast it with what we had seen just a few days earlier, in the *Chicago Daily News*. This was an advertisement by the Illinois Central R. R. that hit a new all-time high in below-the-belt punching at the trucks—Maryland Road Test and all! "They hurt you more than they hurt us," the advertisement said, "Because it's your roads that the big trucks are battering to pieces."

Why, we reasoned, couldn't there be more of the New Haven philosophy and less of the Illinois Central. Instead of taking trains off, the New Haven was putting them on—all because of better service!

Instead of griping about competition, the New Haven was taking a sharp look at its own efficiency. Wouldn't the same thing work with freight shipments as well as passenger service? You bet it would!

And here's a clincher. From no less an authority than the *Railway Age* we learn that the New Haven increased its net railway operating revenue in the first five months by 35.3 per cent over 1951. In the same period, the much larger Illinois Central decreased its net by 22.3 per cent.

When the happy day comes when all forms of transportation work on improving their own service instead of knocking their competitors, they'll all turn in a better profit.

Bart Rawson

Editor





## —AND THE BOSS' DOUGH ISN'T ALL IT SAVES!

THERE's been a lot less wear and tear on *me* since the Boss cut costs on truck seat cushions!

Don't get me wrong—he didn't buy anything cheaper. He's had all that malarkey. He just up and replaced all bunged-up seat cushions with full-volume AIRFOAM—and hasn't needed new cushions—or covers—since.

Not a *one*, mind you—and some of our trucks have clocked off 150,000 miles and more!\*

And he hasn't needed new drivers, either! That AIRFOAM's got what it takes to keep *us* relaxed and comfortable over the toughest routes on the circuit!

So I say "Just keep on giving us AIRFOAM, Boss—and we won't begrudge you your savings!"

★ ★ ★

DRIVERS, FLEET OPERATORS, using full-volume AIRFOAM, tell us it's easy on drivers and seat covers, never lumps, sags or breaks down—seemingly wears forever. We're sure they'll tell you the same—but for some signed maintenance records to pop your eyes wide open, write Goodyear, Airfoam Division, Akron 16, Ohio.

\*From actual case history. Write us for many more.

### THE SECRET OF AIRFOAM COMFORT:

AIRFOAM gives to the lightest touch—comes back with gentle upward pressure. It's this airy buoyancy that smothers bumps and jolts, makes AIRFOAM so relaxing to ride or rest upon.



*Airfoam*

SUPER-CUSHIONING BY

**GOOD YEAR**

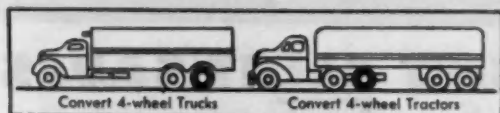
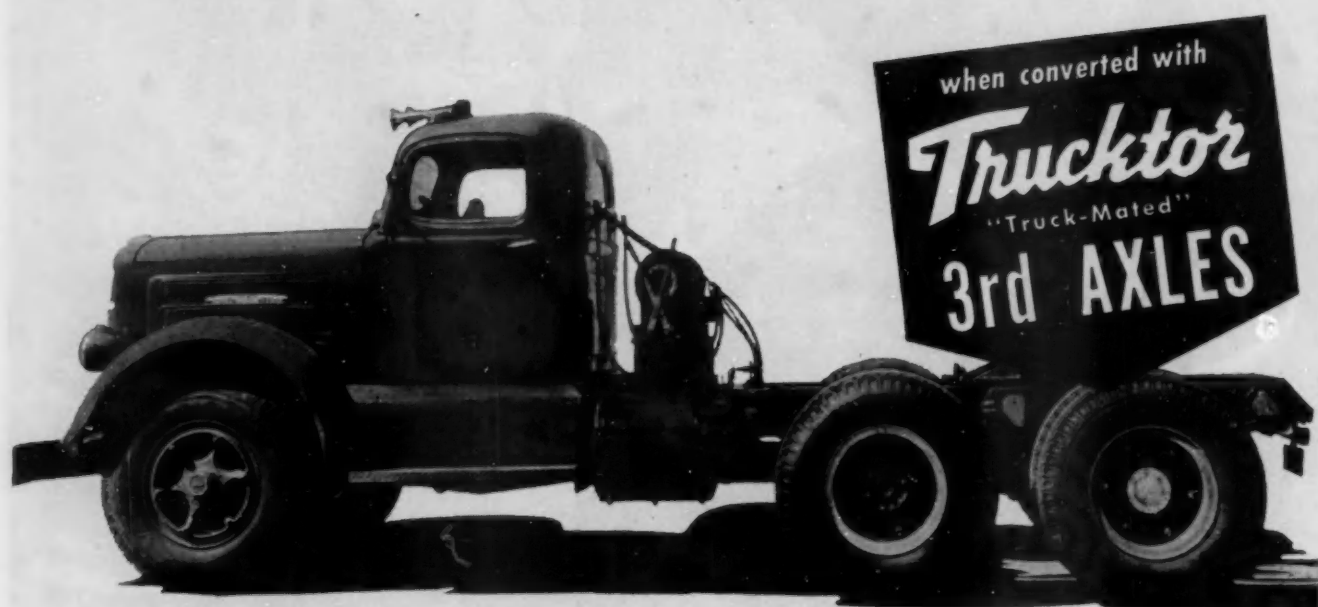
THE GREATEST NAME IN <sup>FOAM</sup> RUBBER

Airfoam—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

White Model WC-28T with Trucktor Model HR  
Third Axle, 10.00/20 tires, mechanical air  
brakes.



## White Tractors Haul More... More Safely...



Available for Most Truck Makes  
and Models, Present or New

Trucktor's unique "Truck-Mated" design has won it leadership in many industries. Haulers of gasoline, oil, syrups... coal, fill, asphalt... steel, lumber, machinery... grain, feed, fertilizer... packaged goods, dairy products, etc... all have capitalized on Trucktor's winning combination of bigger payloads, better operating characteristics, and less maintenance. At right are shown a few features that make "Trucktored" vehicles *safer* for driver, truck and cargo.

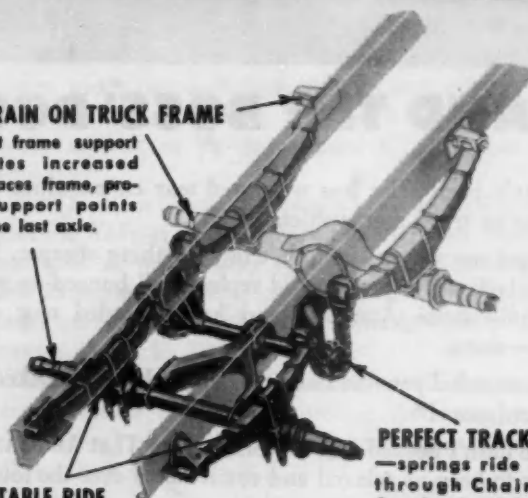
### TRUCKTOR Detachable Chain-and-Sprocket 4-WHEEL DRIVE



Makes tire chains unnecessary. When extra traction is needed, sprocket chains are slipped over sprockets and pinned. Attached and detached quickly, simply, without removing wheels (in picture, wheel removed to show construction.)

### LESS STRAIN ON TRUCK FRAME

—6-Point frame support distributes increased loads, braces frame, provides support points behind the last axle.



### MORE STABLE RIDE

—two extra springs carry extra load smoothly, safely—provide lower center of gravity, greater flexibility, less side sway.

### PERFECT TRACKING

—springs ride "free" through Chain-and-Sprocket Load Divider—unique yoke arrangement hauls the trailing axle, absorbs all braking torque!

For further information, see your Truck Dealer,  
Trucktor Distributor, or write to

THE TRUCKTOR CORPORATION, Route 29, Mountainside, N.J.

*Safety IS NO ACCIDENT — 6-Wheelers ARE SAFER!*

# WASHINGTON RUNAROUND

by KARL RANNELLS Washington Correspondent

## Production Estimates Muddled

National Production Authority is considering allocation of sufficient controlled materials to permit first quarter 1953 production of 300,000 trucks and 1,250,000 other motor vehicles. But this, as well as production levels for the remainder of 1952, depends upon what the full impact of the steel strike has been upon the automotive industry. Officials were still figuring this out in late August and hoped to have the answer in early September.

Depleted inventories and supply pipelines would have to be refilled to substantial levels before a clear picture could be had, they said. Last month they were reluctant to make an estimate beyond unofficial guesses that output would be below the last half goal of 450,000 trucks.

The trouble will be shortages of specific types rather than an overall steel scarcity. Some segments of the industry believe much of the problem could be solved by use of higher cost conversion steel. They are reluctant to do this unless NPA will agree not to make them charge it against their regular quotas.

## Steel Hike Multiplies Costs

Private opinion of some top officials is that the real impact of the steel strike will show up in the civilian economy in higher prices rather than commodity shortages. The reason, of course, is the price increase granted the steel industry to help offset the wage increase. Although this increase was only \$5.20 a ton at the steel mill level, it will be multiplied through the processing stages until it shows up at the end product level in amounts ranging from a cent or two for minor items to dollars each for major commodities.

Last month no one had a very clear idea just how much this was going to cost the various metalworking industries. The automotive industry, however, was certain that the higher steel price would add more than \$100,000,000 to its production costs. This would eventually be reflected in higher costs to users of trucks, automobiles, and replacement parts.

## Freight Car Program Sags

A great deal more will be heard over coming months concerning freight cars as the Defense Transport Administration tries to pump new life into the sagging program. In the two years since the program first started only once or twice has production got near the 10,000 a month target. Beginning with October, DTA says, this target must be boosted to 11,000 a month.

Railroads say they can't get the cars, that they are

not being produced because car builders can't get steel and other materials. Lack of materials has held down production.

## Structural Steel Diverted

Until the first of the year, a great deal of structural steel which might have gone to terminals, garages, warehouses, and other commercial construction may have to be diverted to industrial expansion projects by order of the National Production Authority. An exception would be if the builder could show that his project is highly necessary to some defense program. However, orders may still be placed for controlled materials for delivery if and when. And NPA is changing its rules so that a majority of such projects won't have to apply to the agency at all after January 1.

Those planning to ask the government for help—maybe a loan, a tax certificate, or even priority aid—in building a new warehouse, terminal and so on should keep in mind the new government standards concerning dispersion. It will be increasingly harder to get government aid unless the site location is about 10 miles from other industrial facilities.

## Octane Ratings Stable

Little change has showed up in the volatility of gasoline during the past year. According to the latest report by the Bureau of Mines, octane ratings of both premium and regular gasolines were slightly higher last winter than during the summer of 1951. On the other hand, the ratings were slightly lower than for the previous winter of 1950-51.

Average octane ratings for the nation as a whole ran 90.0 for premium gasolines and 83.1 for the regulars, under research tests; under motor method testing, the ratings averaged 82.0 for premiums and 78.1 for the regulars. By region, ratings were generally higher in the Atlantic and Northeast areas and lowest for the Southwest.

## Court Upholds ICC

Gasoline is not a general commodity according to the Interstate Commerce Commission and the ICC's right to classify it otherwise has been upheld by a federal court. Such a ruling was made recently by a three-judge tribunal in upholding a cease and desist order by the ICC which had been questioned in court. In the case involved, the ICC found that petroleum products were being transported under general commodity authority which was restricted by an exception provision forbidding transport of "explosives and dangerous articles."



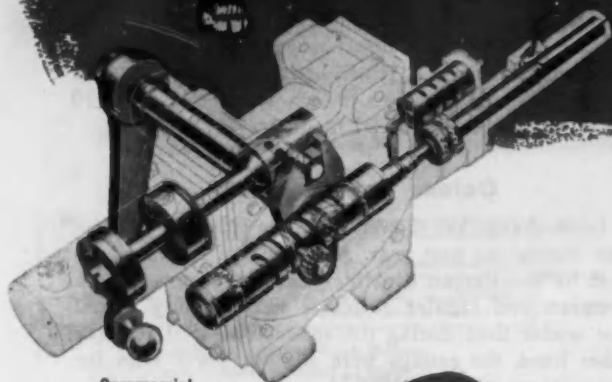
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*Responsive...*  
**POWERFUL...**



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friendly, courageous home protector.  
Alert... Responsive... **POWERFUL!**



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***Easier, Safer* STEERING FOR  
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**Earning power**—Ross Hydrapower gives effortless, fatigueless steering that *steps up* operator efficiency... speeds schedules.

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**Under every driving condition**—Ross Hydrapower gives new steering *ease* and *safety* for driver and passengers... new *protection* for vehicle and payload.

We invite discussion of any steering problem.

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**NEW TIRE MILEAGE**

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For New Tire Mileage consult your  
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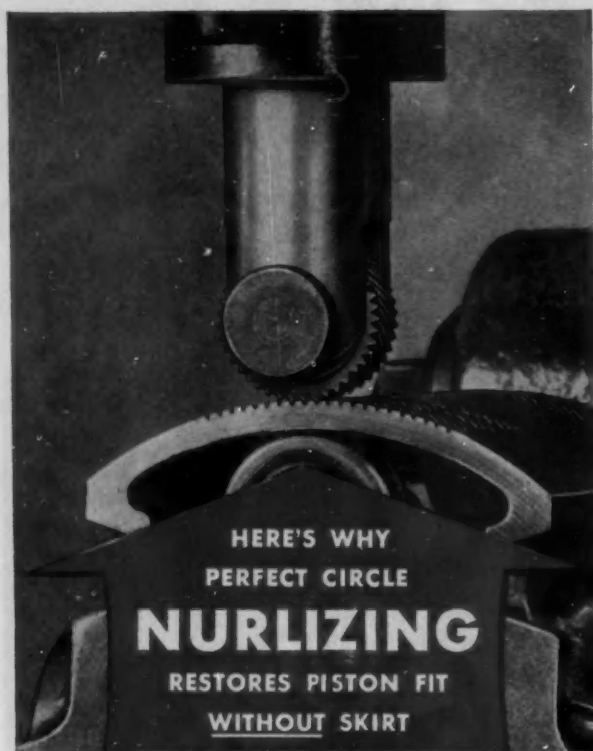
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HERE'S WHY  
PERFECT CIRCLE  
**NURLIZING**  
RESTORES PISTON FIT  
WITHOUT SKIRT  
COLLAPSE OR DISTORTION

Notice the roller on the inside of this cut-away piston which supports the skirt when pressure is applied to the knurling wheel. The displacement of surface metal is accurately controlled by air pressure on the knurling wheel without affecting the shape characteristics of the piston.

**NURLIZING**, the Perfect Circle method of re-sizing pistons, has given outstanding performance in over 5,500,000 installations!

Success invariably encourages imitation but the splendid record of NURLIZING remains unchallenged! Why? Because Perfect Circle NURLIZING is the one and only method of re-sizing worn pistons *quickly, accurately and permanently* without affecting the original shape characteristics of the piston.

Remember—there's a difference in piston knurling processes. For lasting dependability . . . for freedom from come-backs . . . insist upon proved Perfect Circle NURLIZING . . . the original! Perfect Circle Corporation, Hagerstown, Indiana; The Perfect Circle Co., Ltd., Toronto.



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1. Increases piston diameter to exact predetermined size quickly, accurately, permanently.
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3. Eliminates piston slap, stabilizes pistons, increases ring life.
4. Interrupted surface assures adequate lubrication, longer piston life.
5. Equally effective on new or used, cast iron or aluminum pistons.
6. Enables dealers and Doctors of Motors to do better overhauls at lower prices.

**Perfect Circle** NURLIZING • PISTON RINGS  
*The Standard of Comparison*



# DETROIT DISPATCH

by LEN WESTRATE Detroit News Editor

## New Model Forecast

New model trucks will start to appear in October with the introductions running into January or possibly February. Of the major builders, only one will have a completely new cab and styling change. Another is upping horsepowers and GVW all along the line. Two companies will have an additional model larger than they now offer. Another general trend is putting more weight forward on the front axles.

## Study Wheel Standardization

Interchangeability of wheels between different make trucks may come as a result of a new committee set up by SAE to work on standardization. Currently, there are 5-, 6-, 8-, and 10-hole wheels with varying size bolt circles. Also, some pilot from the stud and others from the hub. In addition, Chevrolet uses a wheel different from all others and some of the Ford wheels also are peculiar to that company. Long range objective of the program would be to have possibly two or three basic wheels which could be interchanged between various make trucks in the same general weight class. The major wheel companies are cooperating in the project which admittedly is a long range proposition.

## Automatic Transmissions Pushed

The trend toward automatic transmissions for truck use will get a push from two large manufacturers next year. They will offer automatic drives on smaller units, possibly up to one-ton capacity. Currently GMC is the only company offering a fully automatic drive on trucks, and that only on the parcel delivery. Ford had announced Fordomatic would be available on its panel delivery last spring, but it did not materialize.

## No Truck Shortage

Fleet operators need have no worries about a shortage of trucks this year. Even after a 55-day steel strike, which cut production drastically for several weeks, trucks with the exception of very light categories were available in ample supply. The industry still expects to make a million trucks this year but sales certainly will fall below 900,000 units, the lowest since 1947. Truck makers have to build only an average of 75,000 units a month the rest of this year to top a million, an easy goal. However, new registrations

will have to average 83,000 a month to reach the 900,000 figure, a highly unlikely development since they have not reached that total in any one month this year. It is a fact that the truck business is off from a year ago, which proves again that truck sales pretty well follow the general level of business activity.

## Truck Leasing Grows

Truck leasing is increasing to such a point that two companies are reported to be considering setting up separate leasing organizations. In fact, leasing of cars and trucks has increased to such a point that one of the Big Three is attempting to soft pedal operations in that field because its historical balance between fleet and dealer sales is being disturbed in some areas.

## Diesel V-8 Engines?

With passenger car engines definitely trending to V-8's, some truck engineers think the same thing may be in store for future truck diesel engine development. They point out that such an engine would be shorter and more compact, a valuable feature in pushing cabs forward to accommodate longer trailers. Another advantage would be ability to increase RPM because of the shorter and more rigid crankshaft.

## Or Atomic Power?

For the first time a responsible automotive industries official has come up with a prediction that atomic power for motor vehicles may come in the future. George W. Mason, president of Nash, writing in the Detroit Free Press, predicts that trucks, buses, and even passenger cars powered by atomic energy may be a common sight in 20 to 30 years.

## LPG Truck Sales Slow

We hear that sales of trucks equipped with LPG engines as standard equipment are off to a slow start. In all fairness, it must be recognized that they have been offered to the operators for only a few months. Nonetheless, there has been no great rush to buy this type of equipment yet, possibly because distribution of LP fuels has not made it uniformly available throughout the country. Even though demand for such trucks is not particularly brisk, at least one large manufacturer has developed a conversion kit which it can make available if there is a demand for it.

## Warner Electric Brakes

respond smoothly, instantly... give

two independent braking systems for

# SAFE STRAIGHT-LINE BRAKING

Here's why more and more fleet owners are turning to Warner Electric Brakes for their truck trailers.

It's because of the important *dual* safety factor provided by this better braking system.

First—with Warner Electric Brakes on the trailer, you have *two* independent braking systems. If one should become inoperative for some reason, you still have control.

And, second—this independent *electric* trailer brake system synchronizes instantly with tractor brakes. There is no time-lag in the action at any point... braking is controlled and op-

erated electrically—with *lightning speed*! Just touch the control and you have immediate response of *all* brakes at the same time... in the exact degree of power desired!

This precisely synchronized Warner *electric* action means smooth, *straight-line* deceleration and stops. Tractor and trailer act as a single unit to guard against skidding, diving, sliding, jack-knifing.

Thus, you have *completely balanced* braking of two independent systems for double safety, double dependability to match any road or load condition.

OUR 25TH YEAR—WARNER ELECTRIC BRAKE & CLUTCH COMPANY, BELOIT, WISCONSIN



## ELECTRIC BRAKES

FOR TRUCK TRAILERS

YOU ARE INVITED TO ATTEND THE

**WARNE CR**

**AUG. 15—NOV. 2**

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**BETTER BRAKING**

**AND GREATER**

**HIGHWAY SAFETY**

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WAY SAFET

September, 1952



**Fairmont Foods Co. fleet  
Warner equipped for smooth  
stops... quick action... economy**

Since 1934, Warner Electric Brakes have been used on the trailers of Fairmont Foods Co., Concordia, Kansas.

A busy fleet of 54 trucks and trailers is used by this company to transport ice cream, dairy products, and other foods produced

by this firm. Long and short trips are made in all kinds of weather over rolling terrain—average trip length is 125 miles daily. Plenty of "stop and go" driving to prove braking performance.

With this kind of trucking experience back of them, the people

of Fairmont Foods report that Warner Electric Brakes offer these important extra advantages: (1) quicker action, (2) smoother stops, and (3) less maintenance cost. Get facts now on how to bring these benefits to your fleet, too... write for factual folder.



THE REMARKABLE SAFETY DEMONSTRATION DURING

**WARNE CROSS-COUNTRY SAFETY TOUR**

Starting August 18, at St. Paul, Minnesota, the colorful Warner truck-trailer begins its Cross-Country Safety Tour to present safety demonstrations at the principal cities shown on map at right. See your nearest Warner Electric Brake distributor for details and date of demonstration in your area.



**FREE!** New factual folder "Six Steps to Better Braking for Truck Trailers." Get your copy now.

Gives important tips on driver safety through synchronized braking. Explains the precise operation, simplicity of hook-up, amazing economy and added safety features of electric braking. Write today. Warner Electric Brake & Clutch Company, Dept. CCJ, Beloit, Wisconsin, U. S. A.



COMMERCIAL CAR JOURNAL, September, 1952

29





the **cleanest**  
thing on  
wheels!

## THE LEE 5-RIB "HIGHWAY"

Road-Rated for  
"all 'round trucking service"

The deep grooves of this new Lee 5-Rib Highway tire have such wide angles because we planned it that way . . . years of testing have proved these angles best for ejecting stones and pebbles.

And those w-i-d-e ribs? Experience shows they wear longer and more evenly because they put more rubber on the road and control squeegee action.

Built on the typical tough Lee Truck Tire body, these new 5-Rib Highways can take recap after recap to give you more service, less cost.

Here's a tire specifically designed to meet urgent and growing demand for a strong carcass, long wear tire that will carry all kinds of loads over all kinds of roads.

Thousands of miles from now, you'll be glad you stopped today to send us the coupon below. Do it NOW!

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### THE ROAD-RATED LINE

**ROAD-RATED:** Every Lee Truck Tire is built for a specific type of service. Each is "road-rated" so you will know which will best match your needs . . . decrease your costs.

**FREE!**

LEE RUBBER & TIRE CORPORATION  
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Please send me free copy of book "HOW TO ROTATE TRUCK TIRES AND GET EXTRA SERVICE" and information on Lee "Road-Rated" Truck Tires.

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TRUCK TIRES  
"Truck Tires.

September, 1952

# CCJ REPORTS

on News of the Industry

## ICC Safety Regs Amended

Changes have been made in the tire size and fuel tank location sections of the Interstate Commerce Commission Safety Regulations (CCJ, June, Pg. 67). Section 193.75, regarding tire size in relation to weight, has been amended to delete references to axle weight.

It now reads:

"Every motor vehicle shall be equipped with tires of adequate capacity to support its gross weight. The tires supporting every motor vehicle intended to be operated in excess of 25 miles per hour shall be of such size that the sum of their capacity as shown by the following table shall at least equal the gross weight of such vehicle."

The table of tire sizes and weights remains unchanged with the addition of the following sizes:

<i>Tire size and ply rating</i>	<i>Capacity (lb)</i>
7:50 x 20—10 ply	3375
8:25 x 20—12 ply	3938
9:00 x 20—12 ply	4813

Capacity of tire sizes and ply ratings not shown in the original table or included in these additions will be decided by the ICC upon request.

Section 193.65, (a), "Fuel Container Location," has been modified so that trucks with fuel tanks of 20 gal or less, manufactured prior to Jan. 1, 1953, may have part of the fuel tank located forward of the front axle of the power unit. Trucks manufactured after this date may not have any part of the tank forward of this axle.

## National Safety Congress

Truck and bus operators will join with over 12,000 safety-minded people from all over the world at the 40th Annual National Safety Congress of the National Safety Council in Chicago, Oct. 20-24.

Commercial Vehicle Section sessions will open Tuesday morning. The final session on Thursday will be a joint one with the Transit Section. Featured will be the presentation of the National Fleet Safety Contest awards.

## ATA Nominating Committee

ATA's Nominating Committee for the October convention (Oct. 6-10, New York City) has been announced with E. J. Buhner, Silver Fleet Motor Express, Inc., Louisville, Ky., ATA vice president at large, as chairman. Other members are D. L. Sutherland, Middle Atlantic Transportation, Inc., New Britain, Conn.; Hugh E. Sheridan, Sheridan & Duncan, Inc., New York, N. Y.; Ted V. Rodgers, Sr., honorary chairman, ATA board of directors; John M. Akers, Akers Motor Lines, Inc., Gastonia, N. C.; Earnest M. Wheaton, Wheaton Van Lines, Inc., Indianapolis, Ind.; Henry E. English, former ATA board chairman; C. J. Williams, ATA third vice president; Julius Gaussoin, Silver Eagle Co., Portland, Ore.; C. A. Nelson, Nelson Bros., Denver, Col.; Frank Terramorse, Kentner Truck Lines, Inc., San Francisco, Cal.; and Walter F. Carey, ATA first vice president.

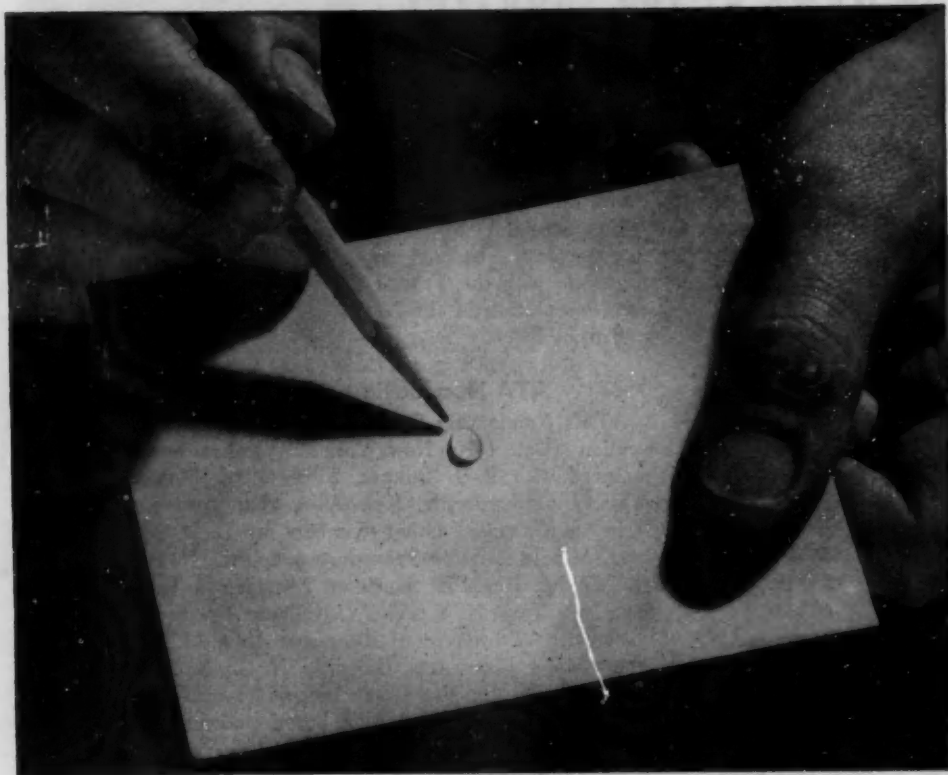
[TURN TO PAGE 192, PLEASE]

## DATES and DOINGS

SEPT. 8-12—Fleet Supervisor Training Course, University of Denver, Denver, Colo.  
SEPT. 11-12—Wisconsin Motor Carriers Assn. Annual Convention, Pine Point Lodge, Elkhart Lake, Wis.  
SEPT. 11-12—Tennessee Motor Transport Assn. 18th Annual Convention, Peabody Hotel, Memphis, Tenn.  
SEPT. 11-13—Pennsylvania Motor Truck Assn. Fall Meeting, Bedford Springs Hotel, Bedford Springs, Pa.  
SEPT. 15-17—Truck Body & Equip. Assn., Convention and Exhibit, Chase Hotel, St. Louis, Mo.  
SEPT. 16—Massachusetts Motor Truck Assn. Annual Convention, N.W. Ocean House, Swampscott, Mass.  
SEPT. 17-18—West Virginia Motor Truck Assn. Annual Convention, Daniel Boone Hotel, Charleston, W. Va.  
SEPT. 17-18—Transportation and Communication Committee, Chamber of Commerce of the United States, Washington, D. C.  
SEPT. 17-19—National Assn. of Motor Bus Operators, Annual Convention, Drake Hotel, Chicago, Ill.  
SEPT. 18-20—Nebraska Motor Carriers Assn. Annual Convention, Fontenelle Hotel, Omaha, Nebr.  
SEPT. 18-20—Indiana Motor Truck Assn. Annual Convention, The French Lick Springs Hotel, French Lick, Indiana.  
SEPT. 22-25—American Transit Assn. Annual Convention, Traymore Hotel, Atlantic City, N. J.  
SEPT. 23-26—Pennsylvania State College Motor Fleet Supervisor Training Course, Penn State Campus, State College, Pa.  
SEPT. 23—Motor Transport Assn. of Connecticut Annual Convention, Bond Hotel, Hartford, Conn.  
SEPT. 28-30—Kansas Motor Carriers Assn. Annual Convention, Broadview Hotel, Wichita, Kansas.

OCT. 6-7—North Carolina Motor Carriers Assn. Annual Convention, Carolina Hotel, Pinchurst, N. C.  
OCT. 6-9—American Trucking Assn. National Truck Roadshow, Madison Square Garden, New York, N. Y.  
OCT. 6-10—American Trucking Assn. Annual Convention, Waldorf-Astoria Hotel, New York, N. Y.  
OCT. 6-10—Driver-Trainer Course, University of Nebraska, Lincoln, Neb.  
OCT. 14-16—Society of Industrial Packaging and Materials Handling Engineers Annual Exposition, Coliseum, Chicago, Ill.  
OCT. 20-24—National Safety Council 40th Annual Safety Congress, Conrad-Hilton Hotel, Chicago, Ill.  
OCT. 22-24—SAE Annual Transp. Meeting, Wm. Penn Hotel, Pittsburgh, Pa.  
OCT. 27-29—National Lubricating Grease Institute Annual Meeting, Edgewater Beach Hotel, Chicago, Ill.  
OCT. 29-31—American Society of Body Engineers Seventh Annual Technical Convention, Rackham Memorial Bldg., Detroit 2.  
NOV. 13-15—Montana Motor Transport Assn. Annual Convention, Florence Hotel, Missoula, Montana.  
NOV. 13-16—Oregon Motor Transport Assn. Annual Convention, Gearhart Hotel, Gearhart, Oregon.  
NOV. 19-21—Arkansas Bus & Truck Assn. Annual Convention, Hotel Sheraton, Little Rock, Ark.  
NOV. 20—Maine Truck Owners Assn. Annual Fall Dinner Meeting, Lafayette Hotel, Portland, Me.  
DEC. 10-13—Automotive Service Industries Show, Convention Hall, Atlantic City, N. J.  
OCT. 24-26—Idaho Motor Transport Assn. Annual Convention, Bonneville Hotel, Idaho Falls, Idaho.

There is a difference in  
sealed-beam headlamps

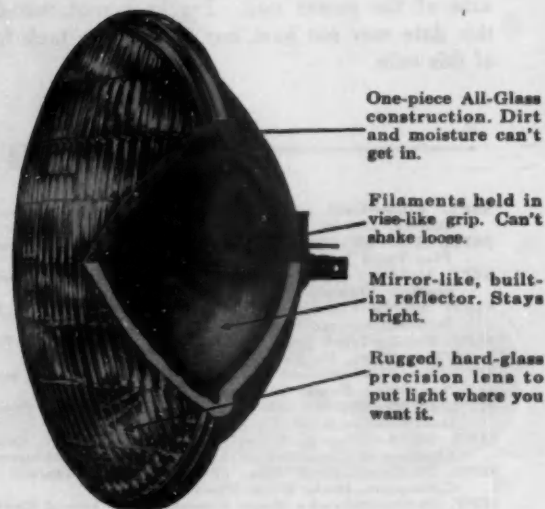


...and this  
is it

## All-Glass sealed-beam headlamps do not grow dim

When moisture collects inside a headlamp and deteriorates the reflector, it cuts light output. Unless your headlamps are All-Glass, you may be able actually to see traces of moisture inside. But there's one way to be *sure* your headlamps are not growing dim. Replace them with G-E All-Glass headlamps. Because they're *All-Glass*, all one big bulb, there's no way for water to get in.

Tests show that General Electric sealed-beam headlamps average 99% as much light after years of service as when new. For your safety and driving pleasure, be sure to specify G-E All-Glass headlamps.



*You can put your confidence in—*

**GENERAL  ELECTRIC**



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**LOOK AHEAD** in your business, too! Have you examined your transportation requirements in the light of today's... and *tomorrow's* operating condition?

White *Specialized Design* engineers into your trucks all the quality... all the weight-saving advantages... all the economy that comes from years of experience. From years of building to highest standards and efficiency, yet tailoring to your exact operating conditions.

Ask your White Representative to evaluate your present transportation equipment... show you how substantial savings and extra revenue are possible... in your business, starting *today!*

**THE WHITE MOTOR COMPANY • Cleveland 1, Ohio**

**FOR MORE THAN 50 YEARS THE GREATEST NAME IN TRUCKS**



## TOMORROW'S TRUCK FOR RALSTON-PURINA CO.

The most exciting White in the Ralston-Purina fleet is "Terra IV", the space ship of Commander Buzz Corry, "Space Patrol" hero. The Ralston Rocket is on a nation-wide tour by White 3000, exhibiting its inter-stellar devices, space-o-phones, and look at "Terra", the City of the Future, through the amazing Viewscope.



## White PAYLOAD PROCUREMENT PLAN

## FIND OUT WHAT IT MEANS TO YOU

Your White Representative will be glad to give you facts about the White Payload Procurement Plan... your most practical approach to today's operating problems in highway transport. For extra earning power... new savings in operating costs... see your White Representative.

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one-piece All-Glass  
construction. Dirt  
and moisture can't  
get in.

filaments held in  
a case-like grip. Can't  
shake loose.

irror-like, built-  
in reflector. Stays  
bright.

ugged, hard-glass  
precision lens to  
put light where you  
want it.



**E**ver since you were knee-high to a hop-toad, you've heard about America's wonderful *natural resources*—the bountiful fertile fields, the towering timber growth, the boundless water power, and the untold wealth of gold, iron, oil, silver, coal and other natural treasures that lie buried in the ground.

Is it because America has *more* natural resources than any other country that Americans enjoy the world's highest standard of living? No—many countries have as much—some have more.

Then is it because Americans *do* more with what they've got?

Yes! And the reason is as plain as the nose on your face. It's because Americans are free to develop their natural resources—and their natural resourcefulness—in the wholesome climate of *open and strenuous COMPETITION*.

**COMPETITION**—not “regimentation”—is what eggs a man on to do his best.

**COMPETITION**—not government control—is what urges a business to give its customers ever greater value for their money.

So let's say “**NO SALE**” to the *ism* peddlers who would have us swap our U. S. A. system of free competition for their “planned” regimentation—trade our U. S. A. freedom and plenty for their serfdom and poverty!

\* \* \*

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MORE FLEETS USE  
**SPEED WASH**  
THAN ANY OTHER FOUNTAIN BRUSH

Thousands of fleet operators consistently choose "Speed Wash" over any other fountain brush because it's guaranteed to clean trucks better, faster, and easier than any other. You must be completely satisfied or your money will be refunded in full if the "Speed Wash" brushes you buy are returned within ten days. Order yours today on this money-back guarantee! Send check or money order for postpaid shipment.



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Please ship the following brushes:

QUANTITY	DESCRIPTION	PRICE	AMT.
	 NO. 240 OBLONG SPEED WASH, 11" back, for heavy duty trucks, trailers & busses, complete with 5' handle.	\$12.45	
	 NO. 250 ROUND SPEED WASH, 5 1/2" Dia. back, for light trucks, passenger cars, complete with 5' handle.	\$12.45	

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Address \_\_\_\_\_

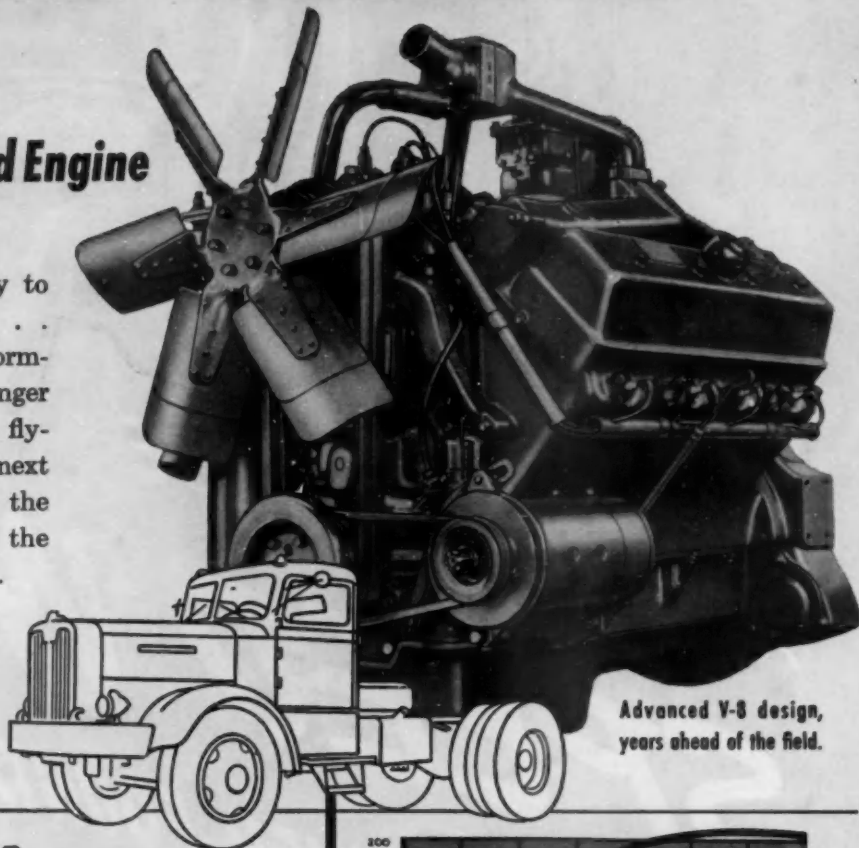
City \_\_\_\_\_ State \_\_\_\_\_



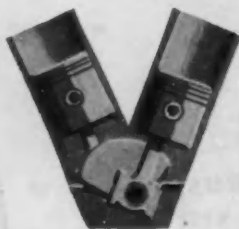
# A NEW AUTOCAR V-8 FOR HEAVY-DUTY HIGHWAY HAULING

## A modern Valve-in-Head Engine

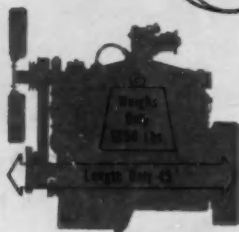
This modern engine has plenty to offer heavy-duty haulers . . . smoother, more brilliant performance, greater economy and longer life. Look it over from fan to fly-wheel before you buy your next heavy-duty Autocar. Send for the Autocar V-8 booklet. Fill in the coupon and get all the details.



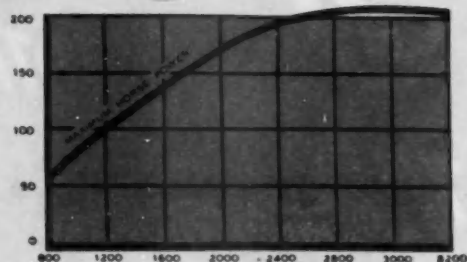
Advanced V-8 design, years ahead of the field.



Fast acceleration is inherent with V-8 design.



Weight: power ratio is lowest of all comparable engines—about 6 lbs. per hp.



200-plus horsepower—a compact, high-output engine for heavy-duty service.

## AUTOCAR TRUCKS

The Autocar Company, Ardmore, Pa.

Established 1897

Factory Branches and Distributors from Coast to Coast

The Autocar Company, Ardmore, Pa. 31

Please send me the Autocar V-8 booklet

Name \_\_\_\_\_

Title \_\_\_\_\_

Firm Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

Zone \_\_\_\_\_ State \_\_\_\_\_

How many trucks in your fleet? \_\_\_\_\_



ccj

## BULLETIN BOARD



## Plain Horse Sense

Horse sense in driving a truck might be defined as that wonderful ability some guys have of keeping fenders separated through the employment of right decisions, quickly. Judgment is a damned good thing to take along with you when you climb behind a steering wheel. It involves the ability to cope with new situations, the capacity to make intelligent decisions, the faculty for knowing what and what not to do . . . and how fast to do it. Are you full of horse sense—or are you inclined to join forces with the other end of the horse?

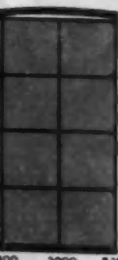
One of the secrets of safe driving is simply the assumption that the other guy is going to do just about anything at any time in any way he pleases. In other words, safe drivers assume that they are responsible for the mistakes of others—and they keep out of their way.

Now there is no formula for safety, but you can sidestep and sideswipe by assuming the following:

1. Stop signs don't always stop the other fellow!
2. A rolling ball is usually followed by a running child!
3. Some people use the rear mirror—but a hell of a lot don't!
4. The guy ahead is just as apt to do the unexpected as not!
5. A hand signal simply means, "I'm going to do something so look out"!
6. A center line is often used as a "beam" by wandering drivers!
7. Any curve is a dangerous one!
8. Rain, fog, snow, ice don't cause accidents!
9. Road signs and traffic warnings apply to you!
10. A pedestrian, right or wrong, has the right of way!
11. Your brakes are only as good as your reaction time and road surface!
12. A good driver proves it by driving carefully and safely!
13. Over confidence and over speeding cause over turns!

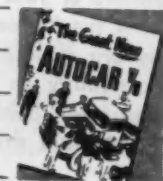
Keep these things in mind when you drive. Observing these cautions won't necessarily write your ticket to the National Roadeo, but will help. Remember, you are your brother's keeper when on the highway. By helping him out of an accident you are doing yourself a favor—and after all, you couldn't accommodate a better guy!

ed V-8 design,  
head of the field.



act, high-  
service.

31





FORGED SPOKE



FORGED DISC



CAST SPOKE

*the best,  
whichever you choose!*

**ALCOA**

*Aluminum Wheels*

You know the type of wheel best suited to your service. Whichever it is, you'll find Alcoa makes it best. Forged spoke, cast spoke, forged disc...all have new advantages when they're made of aluminum...by Alcoa. For Alcoa Aluminum Wheels pay off in extra payload. Here's why:

Alcoa Aluminum Wheels are lighter—weigh thirty to fifty pounds less per wheel than comparable steel wheels. Doubly important because the savings add up fast on today's big rigs, and it's all unsprung weight.

Specify Alcoa Aluminum Wheels next time you order new equipment or replace out-of-round wheels on your present units. They've proved themselves in millions of miles of road runs.

ALUMINUM COMPANY OF AMERICA  
1871-J Gulf Building, Pittsburgh 19, Pennsylvania



"SEE IT NOW" with Edward R. Murrow—CBS-TV every Sunday...brings the world to your armchair. Consult your newspaper for local time and channel.



**ALCOA**

*Aluminum Wheels*



“MY MILEAGE COST RECORDS  
PROVE THERE'S NO FINER  
DEAL THAN...  
**ARMSTRONG!**”

**A. J. COLE**

Cole's Express,  
Bangor, Maine



● “I’ve been running a big fleet for years. So I guess I know what it’s all about.

“I’ve always had to watch costs closely. I’m proud to tell you that every dollar I spend on tires pays off—because today I buy nothing but Armstrongs.

“My mileage cost records prove that dollar for dollar, mile for mile, Armstrongs are the best tire value on the market today.

“I tried them all, compared them all. Then I took to Armstrongs and wouldn’t think of buying another brand.

“If you’re like me, and want one hundred cents value for every dollar you spend—buy Armstrongs.” *Armstrong Rubber Co., West Haven 16, Conn., Norwalk, Conn., Natchez, Miss., Des Moines, Iowa, 601 Second St., San Francisco, Calif. Export: 20 East 50th St., New York 22.*

# ARMSTRONG TRUCK TIRES

Since 1912, millions of tires for cars, trucks and tractors have proved Armstrong’s leadership in value.

# EXIDE ULTRA START

*the sensational  
new Exide*

## BUILT TO LAST LONGER



**IT'S OUTSTANDING!** In every way! In starting dependability . . . length of battery life . . . low cost per mile of operation. Not only in normal fleet service, but also when weather and operating conditions are extra tough. For trouble-free performance at a saving, equip your trucks with the Exide ULTRA START, the fleet owners' battery that's built to last longer.

### THREE EXCLUSIVE LONG-LIFE FEATURES

**SILVIUM** the corrosion-resistant grid alloy, resists a battery's most destructive enemy—grid corrosion caused by overcharging.

**G.O.X.** new active material. So effective that it is possible to take full advantage of the benefits of an acid solution of lower specific gravity.

**PORMAX** practically indestructible separators. Extremely resistant to heat and acid . . . flexible and tough. Low internal resistance increases cold-weather starting ability.

**PLUS**—Vitrex Retainers . . . Element Protector . . . Plastic Connector Shields . . . Plastic Vent Caps . . . Improved Sealing Compound . . . Shock-resistant Container.

**INVESTIGATE NOW!** Learn why the long-life ULTRA START is your best battery buy . . . at any price.

THE ELECTRIC STORAGE BATTERY COMPANY  
Philadelphia 2

Exide Batteries of Canada, Limited, Toronto

"EXIDE" "PORMAX" "SILVIUM" and "VITREX" Reg. T.M. U.S. Pat. Off.  
"ULTRA START" T.M. Reg. applied for

**WHEN IT'S AN Exide YOU START**  
1888  
**DEPENDABLE BATTERIES FOR 64 YEARS**  
1952



way! In starting  
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only in normal  
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rucks with the  
wners' battery

## FEATURES

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tic Vent Caps  
Shock-resis-

y-life ULTRA  
at any price.

Y COMPANY

Toronto

g. T. M. U. S. Pat. Off.

DU START

64 YEARS



**Sales Manager:** "Did you ever do any public speaking?"

**Freight Solicitor Applicant:** "Well, yes. I once proposed to a country girl over the telephone on a party line!"

ccj

**Shop Roustabout:** "Sir, I wish to marry your daughter, Mabel."

**Shop Foreman:** "What! And be my son-in-law?"

**Shop Roustabout:** "Yes, sir . . ."

**Shop Foreman:** "Why, I could take my two hands, an Erector set, a bottle of Nukskin, a pound of fifth wheel grease and make a better son-in-law than you!"

ccj

The trucking firm was throwing a big New Year party for the office force. One of the guests at the party was a young private secretary who was noted for her beauty of face but lack of a curvaceous figure. But that night her evening gown was surprisingly well filled. She was the whispered topic of conversation for just about everybody at the party. Finally, the vice-president in charge of safety threw caution to the wind and went over to congratulate her on the new contour.

The young secretary cuddled up to him as they spun away in a waltz and said, "I'm glad you like it. It's the real decoy."

ccj

**Terminal Manager:** "Why in tarnation did you engage that man as cashier? He is crosseyed, baldheaded, bowlegged and his ears stand out like the handles on a pitcher."

**Personnel Director:** "He's an outstanding example of my shrewdness in selecting people. He will be so easy to identify if he ever takes off with the till." ..

ccj

**Sparkplug Manufacturer:** "Buddy, what would you suggest that we get mommy for Mother's Day?"

**Small Son:** "I'd like to have a little brother, Daddy. Why don't we get her a new baby?"

**Sparkplug Manufacturer:** "But it's only ten days to Christmas and that just won't give me enough time."

**Small Son:** "I know, but there isn't any labor shortage now, so can't you put more men on the job?"

The little independent trucker was a very sick man. Becoming convinced that he had a fatal disease, he called his wife in for a consultation. When they had covered most of the details of winding up his business affairs, he spoke thusly: "Es-marelda, after I die I want you to seriously consider marrying Henry Brown."

"Aw, now, don't you worry a bit. You'll get well, but if you should die, why do you want me to marry Henry Brown and who is he anyway?" said his wife.

"Henry Brown, is that commercial car dealer out on Main Street. Do you remember that tractor-trailer rig he sold me last year?"

"Yes," replied his wife, "I remember that trade, but what has that got to do with it?"

"Well," said the sick trucker, "he gave me a trimmin' on that deal."

ccj

**Shop Foreman's Wife:** "Does your husband carry life insurance?"

**Spark Plug Salesman's Wife:** "No, he carries fire insurance. He knows where he is going."

ccj

**Leadfoot Louie, our Peddle Run Driver,** says that what was once known as folding money is now collapsing currency.

ccj

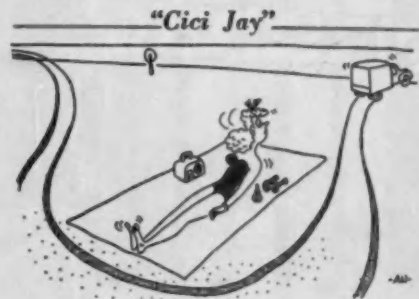
**Apprentice Mechanic:** "In driving out this spindle, how can I keep from hitting my fingers with this hammer?"

**Shop Foreman:** "Hold it with both hands."

ccj

**Grease Monkey's Wife:** "Please hurry, Doctor. My husband drank some poisoned whiskey and he is lying at death's door."

**Cooperative Doctor:** "Now, don't you worry one bit, lady. I'll pull him through."



**Traffic Rate Clerk:** "You ought to see the new altar in our church."

**Buxom Billing Clerk:** "Lead me to it, big boy."

ccj

**Hyliift Operator:** "My kid is a real mental giant. Why, he's only four years old and he can already spell his name frontwards and backwards."

**Warehouse Foreman:** "What's his name?"

**Hyliift Operator:** "Otto."

ccj

After waiting for over an hour for a late bus the lady boarded the first one to come by, and handed the driver her transfer, then trudged to her seat, still very much perturbed over the long wait.

She had no more than taken her seat when the driver turned and yelled, "Hey, lady, this transfer's dated yesterday. It's no good!"

"My goodness," she said sweetly, "I had no idea you were that late!"

ccj

**Fleet Operator:** "For a man who has no experience in preventive maintenance, you certainly ask a high salary."

**Job Applicant:** "Well, there's a good reason why I should be compensated liberally. The administration of such a program is much harder when you don't know anything about it."

ccj

**Brake Specialist:** "Yeah, this truck maintenance business is a nice racket. I'm sure glad I got into it, but I'll never forget the first job I ever had. I was a salesman. First day on the job I got two orders."

**Ignition Specialist:** "Yes, what were they?"

**Brake Specialist:** "Get out and stay out!"

ccj

**Famous Heart Specialist:** "You'll have to cut out alcohol and tobacco entirely. Be in bed by 9 o'clock, every night. That's the best advice I can give you."

**Playboy Fleet Executive:** (With pleading crestfallen look) "See here, Doc, the kind of life I've led I don't deserve the best. What else would you suggest?"

Resume Work





the "lug"  
makes the difference  
in **CAMPBELL**



If you think all tire chains are the same, ask any fleet operator who has changed to Campbell Chains. The patented *Lug-Reinforced* construction, which only Campbell can offer you, makes a big difference in your operating costs per mile!

## *Lug-Reinforced* TIRE CHAINS

Extra metal in Campbell Lugs means extra mileage ... cuts link breakage to a minimum ... assures longer chain life. Campbell's patented

*Lug-Reinforced* construction means greater traction on ice and snow ... greater protection against dangerous skids and side slips.



Campbell Truck and Bus Chains, for every size and every type of service, are packed in durable color-coded bags for easy storage and identification.



Campbell Passenger Car Chains are packed in sturdy boxes that store neatly in car trunks. A handy chain applier is included with each box at no extra cost.

Be sure that every unit in your fleet has a set of Campbell *Lug-Reinforced* Tire Chains now—before the snow flies.

Chain for every need ... INDUSTRIAL ... FARM ... MARINE ... AUTOMOTIVE

**CAMPBELL CHAIN** *Company*

MAIN OFFICE—YORK, PA. • Factories—York, Pa., and West Burlington, Iowa

MAKERS OF THE FAMOUS CAMPBELL LUG-REINFORCED TIRE CHAINS

**CAMPBELL  
CHAIN**

# So DIFFERENT...

## **Power Plus Anti-Rust Protection** **at No Extra Cost**

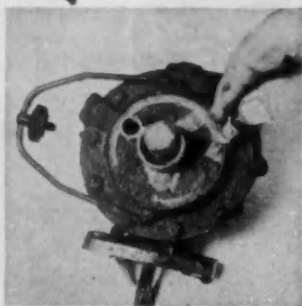
Here are fuels so *different* they have been PAT-  
ENTED—so *revolutionary* in action that they result  
in actual dollar savings for Sinclair users.

How? Sinclair fuels—and *only* Sinclair—contain the  
rust inhibitor RD-119®. This amazing chemical  
forms an invisible waterproof film throughout the  
equipment's fuel system—from fuel tank to combus-  
tion chamber. Used regularly in gasoline engines,

Sinclair Gasoline with RD-119 *prevents* rust and  
corrosion—can save you costly repairs to carburetors  
and fuel pumps. Regular use of Sinclair Diesel Fuel  
containing RD-119 eliminates the problem of rust-  
clogged injectors.

Now, get *Full Power, High Anti-Knock PLUS* the  
*Anti-Rust Protection* of RD-119 — exclusive with  
Sinclair...AT NO EXTRA COST!

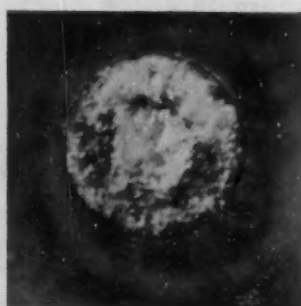
See the Difference  
that RD-119 can make  
in your equipment...



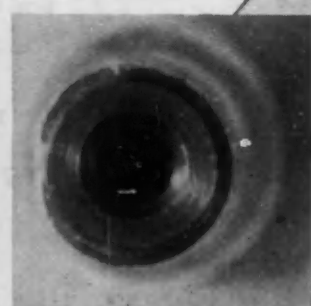
Here is a fuel pump, ruined by  
rust and corrosion taken from a  
3-year-old car operated on ordi-  
nary gasolines.



Fuel pump cover, removed from  
3-year-old car after 25,339 miles,  
shows no sign of rust or corrosion.  
Operated on Sinclair Anti-Rust  
Gasoline with RD-119.



Carburetor jet plugged with cor-  
rosion, taken from a 2-year-old  
car after 12,000 miles of opera-  
tion on ordinary gasolines.



Carburetor jet on a 3-year-old  
car shows no rust or corrosion  
after 35,921 miles of operation  
using Sinclair Anti-Rust Gasoline  
with RD-119.



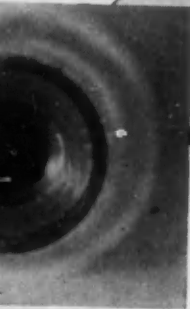
... They're Patented!

ection

vents rust and  
rs to carburetors  
clair Diesel Fuel  
problem of rust-

knock PLUS the  
- exclusive with

t...



et on a 3-year-old  
o rust or corrosion  
miles of operation  
Anti-Rust Gasoline

, September, 1952

**SINCLAIR**  
**Anti-Rust**  
**GASOLINE**  
•  
**DIESEL FUEL**



Phone your local Sinclair  
Representative today  
about Sinclair Anti-Rust  
Fuels.

Sinclair Refining Company,  
600 Fifth Ave., New York 20, N. Y.



## Accurate within half a thousandth

*(Another reason why TIMKEN® bearings  
are first choice with truck manufacturers)*

**T**O pass this Timken Company bearing inspector, most bearing cups must be accurate to within a half a thousandth of an inch.

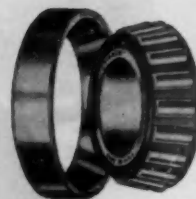
It's just one of many checks made at the Timken Company to assure the exceedingly close tolerances of Timken® bearings.







Timken tapered roller bearings are first choice for original equipment with leading truck manufacturers because only Timken bearings offer all these important advantages: (1) advanced design, (2) precision manufacture, (3) rigid quality control, (4) special analysis steels.

To get all these advantages for yourself be sure the tapered roller bearings you use for replacement are stamped with the trade-mark "Timken". And send now for the free booklet, "Timken Tapered Roller Bearings—Their Care and Maintenance". Write Dept. JC-9, The Timken Roller Bearing Co., Canton 6, Ohio. Cable address: "TIMROSCO".

**SINCE THEY'RE BEST  
WHEN THE TRUCK IS  
NEW, THEY'RE BEST FOR  
REPLACEMENT, TOO!**

**TIMKEN**  
TRADE-MARK REG. U. S. PAT. OFF.  
**TAPERED ROLLER BEARINGS**



NOT JUST A BALL  NOT JUST A ROLLER  THE TIMKEN TAPERED ROLLER  BEARING TAKES RADIAL  AND THRUST  LOADS OR ANY COMBINATION 

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KEN® bearings  
manufacturers)

any bearing inspec  
must be accurate to  
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made at the Timken  
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n Roller Bearing  
s: "TIMROSCO".

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COMBINATION  
September, 1952

# BILLION MILES OF ROAD TESTING

**Leaves No Doubt That  
Bostrom Level Ride "60"  
Truck Seat Gives  
Smoothest, Safest Ride:  
Improves Equipment  
Handling**



**E**VER since the revolutionary principle of suspension seating for trucks was first introduced 12 years ago, Bostrom engineers have constantly tested, retested, improved and perfected their truck seat during more than a billion miles of actual road operation until today, the Bostrom Level Ride "60" Seat leads the field in driver-preference.

The Bostrom Level Ride "60" truck seat is a suspension seat with an intermediate linkage system that protects the driver against shocking jars and jolts. Simple weight controls can be easily adjusted for individual driver weight and varying road conditions.

Medium-firm seat and back move as a single unit to eliminate back-scrub. Air vent between back pad and seat cushion provides positive comfort.

Driver-efficiency hits a new high with a Level Ride "60" seat by reducing driver fatigue, thereby assuring maintenance of schedules, stepping up cargo and equipment handling and improving safety margins.

Back cushion springs are arranged to cradle driver and reduce back strain and irritation. All moving parts of the suspension system are incased in rubber for longer life without maintenance. The durable frame is made of

sturdy steel tubing designed for heavy use. Quick, convenient fore and aft adjuster allows seat to be adjusted to fit individual drivers.

Bostrom Level Ride "60" is standard or optional equipment on the following trucks: International Harvester, Diamond T, Sterling White, Reo, FWD, Federal, Oshkosh, Dart, Walter, Hendrickson, Duplex, Peterbilt, Kenworth, White Freightliner, Ward La France.



**BOSTROM MFG. CO., MILWAUKEE 4, WISCONSIN**

COMMERCIAL CAR JOURNAL, September, 1952



# SIGN OF GOOD QUALITY

When you service the Plymouth, Dodge, De Soto and Chrysler cars or Dodge "Job-Rated" trucks in your fleet with MoPar parts and accessories, you can count on good quality, unvarying dependability.

For one thing, these genuine Chrysler Corporation parts and accessories are made to the same high standards as original parts. They're *tops* in quality. They're easy to install. They help restore new-car and new-truck pep, power, performance—and economy.

All this means that you keep your maintenance costs down and your fleet running at peak efficiency.

One of the best ways to be sure of getting genuine Chrysler Corporation parts and accessories for the Plymouth, Dodge, De Soto and Chrysler cars or Dodge "Job-Rated" trucks in your fleet is to buy where you see the MoPar sign. You'll find it displayed by Plymouth, Dodge, De Soto and Chrysler dealers, as well as by many better general service and repair shops everywhere.

CHRYSLER CORPORATION—PARTS DIVISION, DETROIT, MICHIGAN



Dodge, De Soto and  
trucks in your fleet  
you can count on  
ity.

Chrysler Corporation  
the same high stand-  
in quality. They're  
new-car and new  
and economy.

maintenance costs  
work efficiency.

of getting genuine  
accessories for the  
Chrysler cars or  
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You'll find it dis-  
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er general service

ROIT, MICHIGAN

# "DULUX" ENAMEL ON DERST BAKING TRUCKS *stays fresh in sunny Georgia*



In Savannah, Georgia, where a hot sun shines long and hard, Derst Baking Co. trucks covered over 2 million miles last year. That's why Mr. E. J. Derst, President of the company, wants a truck finish that will stay as *fresh* as the bread his trucks carry, even under the most extreme weather conditions. With this in mind, he first tried durable DULUX Enamel in 1939. Its remarkable protection and lasting beauty were so evident that the Derst fleet has been 100% DULUX-finished ever since!

Perlie Scott, Maintenance Superintendent for the 140 Derst trucks, relies on DULUX for smooth, even flow-out and exceptional hiding . . . for faster work in the paint shop. He likes the way DULUX cuts maintenance costs and keeps trucks *out of the shop* and on the road longer.

So take a tip from Derst. Specify DULUX Enamel for your entire truck fleet. E. I. du Pont de Nemours & Co. (Inc.), Refinish Sales, Wilmington 98, Delaware.



MR. E. J. DERST, President, operates the Derst Baking Company. The company keeps a truck fleet of 140 DULUX-finished units which covered over 2 million miles in 1951.



PERLIE SCOTT, Maintenance Superintendent for the Derst fleet, keeps trucks smart-looking and well protected with handsome DULUX Cream.



150th Anniversary

BETTER THINGS FOR BETTER LIVING  
...THROUGH CHEMISTRY

## DULUX enamel

# Top of the light-duty truck class

It saves a lot of looking to start your hunt for a light-duty truck at your local International Dealer or Branch.

Every International packs plenty of real truck muscle. You can count on peak performance for years of low cost hauling. Each model gives you the easy chair comfort of the roomiest cab on the road.

See your local dealer or branch for proof and you'll never be satisfied with less than an International.

INTERNATIONAL HARVESTER COMPANY • CHICAGO

## Look for these International exclusives:

- Silver Diamond valve-in-head truck engines are rugged, packed with extra power. Engineered to save you plenty on operating and maintenance costs.
- Comfo-Vision Cab—the "roomiest, most comfortable cab on the road." One piece, full-vision windshield. New green-tinted, non-glare safety glass available.
- Wider front axles make possible full 37° turning angle for greater maneuverability.
- Wide variety of light-duty models—½, ¾ and 1-ton sizes—with GVW ratings from 4,200 to 8,600 lbs. 115, 127 and 134-in. wheelbases.



International Harvester Builds McCormick Farm Equipment and Farmall Tractors ... Motor Trucks ... Industrial Power ... Refrigerators and Freezers

Better roads mean a better America

## INTERNATIONAL TRUCKS "Standard of the Highway"





# MANAGEMENT— Key to Driver Testing



By Donald S. Buck,

Traffic Safety Engineer, Department of  
the Army, Washington, D. C.

The value of any given driver test depends on whether  
it can predict safety—and on effective use of results

## Don't Pass the Buck!

THIS is the fourth in a continuing series of articles by Don Buck whose world-wide activities in the realm of safety permit him to speak with authority. CCJ readers are already well familiar with his refreshing new approach to age-old highway safety problems.

In the first two articles ("Attitude—Key to Accidents," January 1951; and "Training—Key to Safe Driving," June, 1951) Mr. Buck stressed the importance of these two aspects of highway safety.

The third article, and perhaps the most significant to date, was carried in the January, 1952 issue. It dealt with an entirely new concept of "Judging Accident Responsibility," from the management point of view.

We believe that the accompanying article will speak for itself; will fit appropriately with the others in this distinguished series. The fifth, on practical use of the tests described here, will follow shortly.—The Editors

▼ "WHICH is the best test for my drivers?" the fleet supervisor or safety director so often asks. If he is experienced he knows that there are more than 40 types available, including the psychophysical, the complex psychomotor, the personal—emotional—biographical, and so on.

He also knows that in many instances test findings, without discounting other usefulness suggest little relationship to the real goal—an actual prediction of safety.

Thus he asks again: "Is there any one test that would be most meaningful and beneficial for our drivers in terms of less accidents, fewer delays and more pay loads delivered on time?"

Obviously, there is no single answer. To cite an analogous situation, suppose a doctor were asked: "Of all the various diagnostic tests, which one is the best?" The answer would undoubtedly run something like this: "Each medical test is designed for a specific phase of a problem—the best test is the one which accurately measures some specific phase of the problem related to successful performance of the job."

Actually a great deal of research has been done in an attempt to answer this basic question. In preparing this article, the writer has studied more than 40 research papers, relating to the subject. Later on I will refer to some of them but before going further, I am going to stick my neck out by stating what I believe is the most important test. The answer may surprise you.

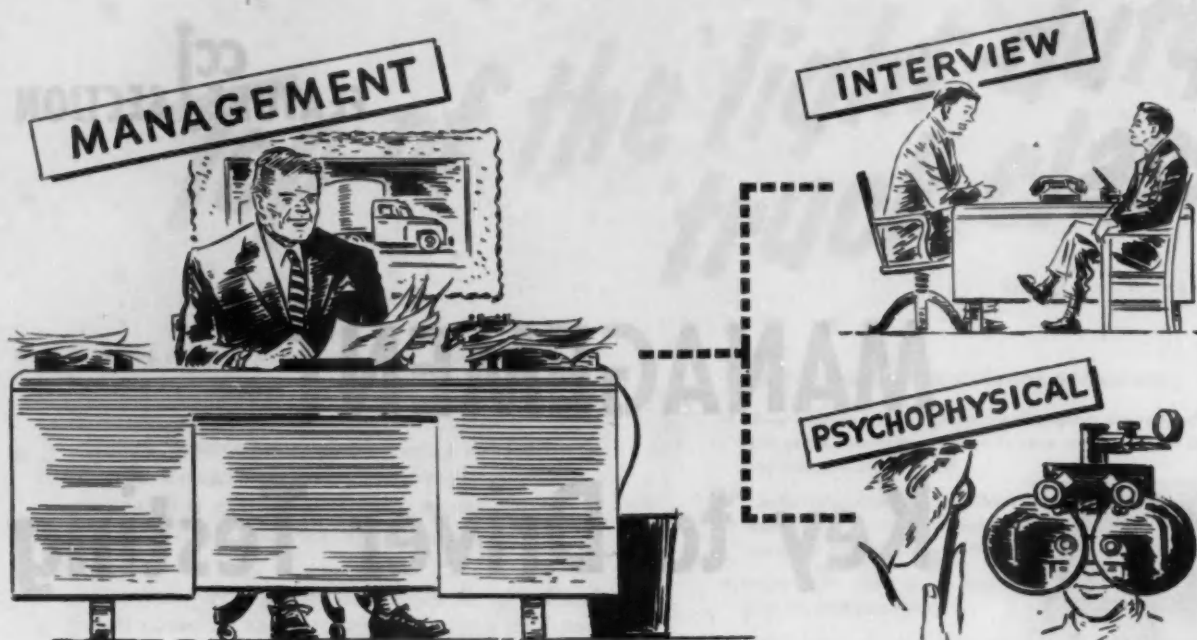
To me, one of the best tests is not a measure of the driver at all, but one that appraises the quality of supervisory practices by management itself.

There are, of course, other important tests. Among them:

1. The background or history test.
2. The knowledge or written test.
3. The psychophysical test.
4. The performance or driving test.
5. The attitude test.
6. The placement interview.

But the success or failure of nearly all of the tests depends on the attitude of management and the degree to which management has utilized and interpreted the results.

(TURN TO NEXT PAGE, PLEASE)



## 6 Steps to Better

### Management . . . Key to Driver Testing

#### Army Management Test

UNFORTUNATELY there is no "packaged" test for measuring these qualities in management. But the most extensive research to date involves a project\* undertaken by the Army to determine administrative practices in motor vehicle "pools," and the relationship of those practices to the over-all safety performance of motor transport units (corresponding to individual fleets).

Factors considered in this study included selection and assignment of personnel, vehicle assignments, maintenance of vehicles, driver and safety training, safety practices, and incentives and disciplinary action. To be of practical value, the study had to reflect the practices, structures, and conditions of all types of motor trans-

port units in the Army. (These units, known as motor pools, are the military version of a complete trucking organization somewhat akin to large terminals or separate companies. The number of vehicles may vary from a few to several hundred.)

The study was designed so as first to identify those motor vehicle pools or units which could be clearly classified as "high" or "low" in terms of *safeness of operation*. Thus 32 large organizations of motor vehicles were selected for intense study. Sixteen of the selected units were "high" (consistently safe, reliable outfits). Another sixteen of the units (representing hundreds of drivers) were consistently "low" in overall safety. All units were roughly comparable in size, missions, organization and equipment. Data for evaluating administrative practices of the motor vehicle units were obtained by use of the following tests:

1. *Driver Symptom Indicator*—Designed to reflect the attitudes of drivers about various administrative

practices. The items in this form covered selection, assignment, safety training, driver training, working conditions, and discipline. To show the nature of this form, here are three sample questions and possible answers:

How do you feel about having one vehicle regularly assigned to you?

- a. It gives me a feeling of pride and responsibility.
- b. It does not mean a thing.
- c. It is a pain in the neck.

What do you dislike most about being a driver?

- a. The hours.
- b. The chicken about safety.
- c. The monotony.
- d. Extra details.
- e. Cross-country driving.
- f. The whole job.
- g. Can't find any fault with the job.

How do most GI's feel about the job of driver as compared with other jobs in the Army?

- a. A good deal.
- b. Better than most.

\* Conducted by Harold A. Edgerton (and his staff) of Bellows Henry and Co., Inc. under immediate supervision of Dr. Julius E. Uhlenor, Personnel Research and Procedures Branch, Adjutant General's Office, Department of the Army.

BACKGROUND



KNOWLEDGE



PERFORMANCE



ATTITUDE



Better

## Driver Testing

is in this form cov-  
assignment, safety  
training, working  
discipline. To show  
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, September, 1952

- c. About the same.
- d. Not as good.
- e. A lousy detail.

2. *Incident Reporting Scale*—Designed to determine how motor unit leaders and criterion rating defined a "reportable" accident.

3. *Trip Ticket Summary*—A summary of pertinent information from one month's trip tickets (dispatch records).

4. *Driving Information Record*—A roster of drivers, including age, length of service, aptitude scores and disciplinary record.

5. *Questionnaire*—For motor unit leaders (fleet supervisors) regarding their training, opinions, safety and administrative policies and practices.

6. *Interview Record*—Qualitative information supplementing the questionnaire.

7. *Maintenance Record Summary*—Summary of vehicle maintenance practices.

8. *Vehicle Damage Report*—A check list to obtain a record of impact damages.

### Army Conclusions

**M**EMBERS of the research team interviewed the motor unit leaders, administered the necessary forms to motor unit personnel, and recorded information from relevant motor unit records. The data were then analyzed, using accepted statistical and psychological methods appropriate to the instrument or form. Certain conclusions were drawn from the analysis, and are outlined in six general areas as follows:

#### 1. Personnel—

- a. "High group" supervisory personnel have had more motor pool experience than those of the "low" group.
- b. According to the motor unit leaders, the "high" units more frequently have Safety non-commissioned Officers (Safety supervisors).
- c. High units gave dispatchers more responsibilities and made a greater effort to select men who can perform this duty.

d. High units drivers had significantly higher level of general intelligence.

e. No significant differences were found between high and low unit drivers with regard to lengths of Army and motor pool service.

#### 2. Training—

a. High units more frequently did their own training of drivers than did the low units. They also more frequently trained temporary drivers.

b. No difference was found between high and low groups in the amount of time spent in safety training.

c. High units seemed to think safety training was more important. They drew their training materials from a greater variety of sources. Their safety personnel more frequently used films, slides, posters, etc.

#### 3. Personnel Policies—

a. There was a tendency for high units more frequently than low units to have a definite promotion policy for motor pool personnel.

b. There were no differences found between high and low groups in rates of delinquency and punishment of delinquency.

c. High units showed a tendency to be more severe than low units in punishing safety violations and accidents. The high units also took a more constructive attitude, by supplementing disciplinary action with additional training, retesting, demonstrations, etc.

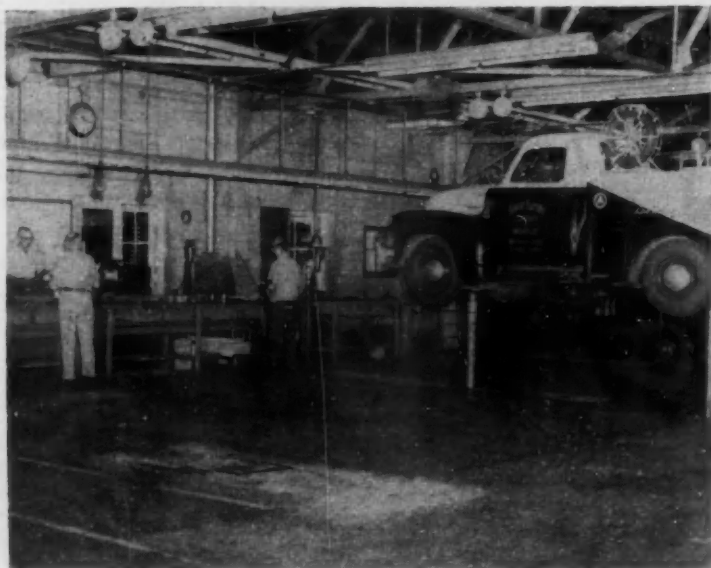
d. A greater number of low units than high units claimed to keep a record of average mileage per gallon of gas for each vehicle.

e. According to the motor officers, the low units made more of an attempt than did high units to check on drivers who were out on trips.

f. High units more frequently utilized incentive systems for increasing driving safety; time off was preferred to other awards as an incentive for the drivers.

(TURN TO PAGE 184, PLEASE)





# Utility Fleet

Improved system cuts manhours,



**By M. C. Alves**

Supt. Motor Transportation  
Union Electric Co. of Missouri, St. Louis

**T**IME has often been compared to money but it has never represented as many dollars as it does today. Growth of a business often means harassment of increasing costs, time-killing methods and unwieldy production methods which have grown faster than the business upon which it depends. Consequently any study of PM procedures must consider efficiency in relation to manpower, machines its manpower uses, all in relation to ultimate results of work performed.

On this basis we have been winning. Our records show that we need less manhours to service our two-thirds larger fleet than we did seven years ago. The difference is a tribute to our mechanics, supervisory personnel and our methods and represents a high factor of lost motion elimination resulting in direct production—production which has been powerized.

We have been in new quarters on a new 3-block site for a little over a year. We provide parking on the site for almost all of our fleet, our employee cars and for a major company department located in a new building adjacent to us. Handling such a large number of vehicles or even ignoring them as much as possible could easily waste the time of half a dozen men every day. To facilitate parking and locating of vehicles later each unit is parked in a numbered slot according to its number painted on the front.

Vehicles designated for shop service may be driven in or brought in by shop Mule, a fork lift truck for which we made an attachment for lifting cars in front by placing a rotatable channel to go under front



*Upper left. A lift for each mechanic speeds PM. Above. Hot water spray system removes ice and snow from equipment while it is being driven through spray*

bumpers on the fork. The man who takes the Mule after a car which saves walking may verify its position by checking a map of the parking areas located on the wall back of the foreman's desk. This makes it possible for him to take the shortest route.

Most of our maintenance work must be done at night because our vehicles are mostly used in the daytime, except for one group which operates 24 hours daily with as many as 13 drivers to a vehicle in a two-week period. These cars run 7 days per week and come in once each week for service. Incidentally in passing,

# Fleet Streamlines PM Procedures

uts manhours,

ups mileage life of equipment, saves money for this progressive fleet



For each mechanic  
Hot water spray  
and snow from  
is being driven  
spray



Vehicles on parking lot are located quickly by means of numbers corresponding to parking slot numbers



A fork lift truck with a special adapter jockies cars around shop and yard much quicker than can be done by driving them. Such time savers release men and mechanics for more productive work

k. The man who  
a car which saves  
its position by  
the parking areas  
back of the fore-  
makes it possible  
shortest route.  
Maintenance work  
night because our  
used in the day-  
ne group which  
ily with as many  
ehicle in a two-  
cars run 7 days  
once each week  
ally in passing.

these heavily used cars turn in the best service cost records indicating that use never hurt anybody's vehicle.

## A Lift for Every Man

**W**E work eight mechanics at night and four in the day time at this location. We have provided each mechanic with a hydraulic lift and can prove that this is economically sound in view of work output. For example, one man can do three brake jobs at night as compared to barely one before equipment was available.

All mechanics, eight at night and four in day time, have flush floor lifts

in their work area and all eight can be used at the same time. Each mechanic does work individually as a rule, and each lift may be used for a variety of different jobs—brake lining, wheel and tire changing, engines, transmissions, differentials, brake cylinder replacement, frame and spring work, front-end work. Any of these operations may be done more quickly, since no one has to wait for equipment. Each mechanic moves more jobs in a shift without the expenditure of any more energy, usually less.

We have gone all out for lifts after a wide experience with pits. A lift

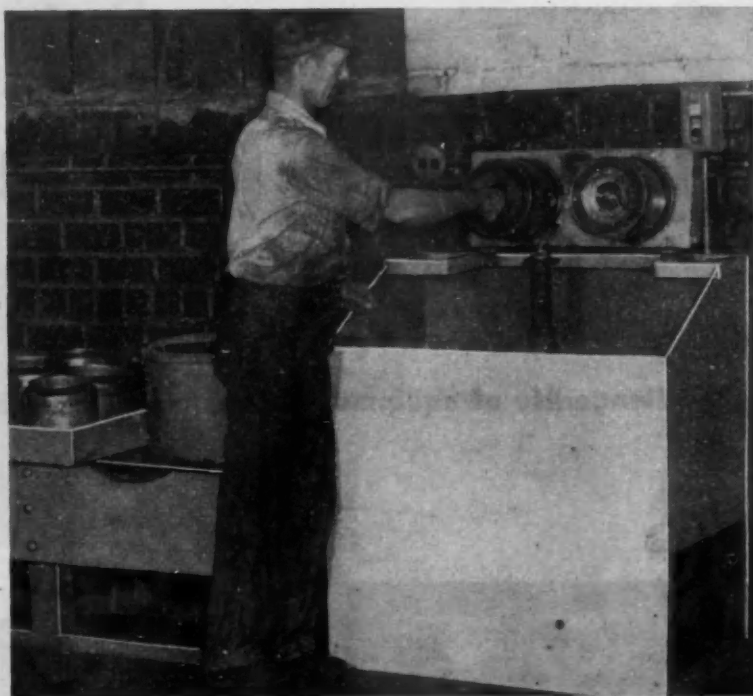
can be installed for 25 to 50 per cent less than the cost of a pit and it can be moved for about 30 per cent of the original cost. There are many other obvious advantages to having plenty of lifts, such as easy adjustment for tall or short men, perfect vertical adjustment to suit type of work being done. Most hazards common to pits are entirely eliminated and our records show that lifts reduce manhours needed for many jobs, particularly clutch replacements, brake jobs, transmission, differential and spring replacements.

(TURN TO PAGE 96, PLEASE)

*In the air cleaner department, cleaners are stored in the rack at the left. The mechanic is installing two cleaners which clamp to this hinged top*

**By L. H. Houck**

**Power operated cleaner flushes out air cleaners in half the time, does a superior job; enables shop to keep supply of reconditioned units on hand. Frequent changing is possible**



## Shop-Made Machine Speeds Air

**THE** impressive array of shop designed and built labor-saving equipment in use by the Louisville Railway Company, Louisville, Ky., extends to service garages as well as dominating main garage equipment.

For instance, cleaning air cleaners

was always considered a tiresome and time-consuming hand job until Torrens A. Smith, equipment superintendent, turned his attention to it.

The result was a power-operated machine cleaner that does better work in half the time and a change in routine that makes servicing an

air cleaner on a bus a mere matter of exchanging a dirty cleaner for a clean one. This job is done in the time it takes to check the oil in the crankcase.

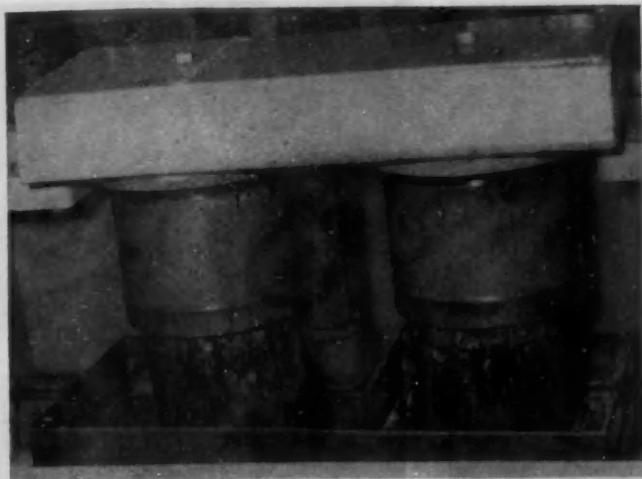
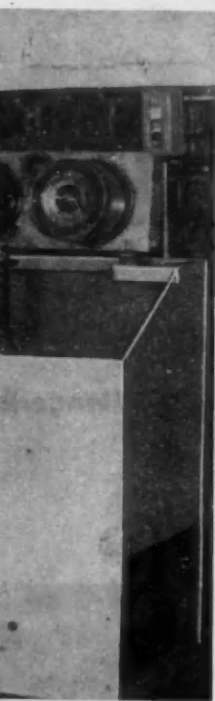
Essentially the outfit consists of a steel tank (shop made), a centrifugal pump and motor, brackets and con-

**Portable air tank supplies air for tires on parked buses, speeds cleaning procedures on valve covers, engine compartments . . .**

*The portable air tank which is filled from the regular compressed air lines is demonstrated here filling a low tire so that the unit can be driven in*

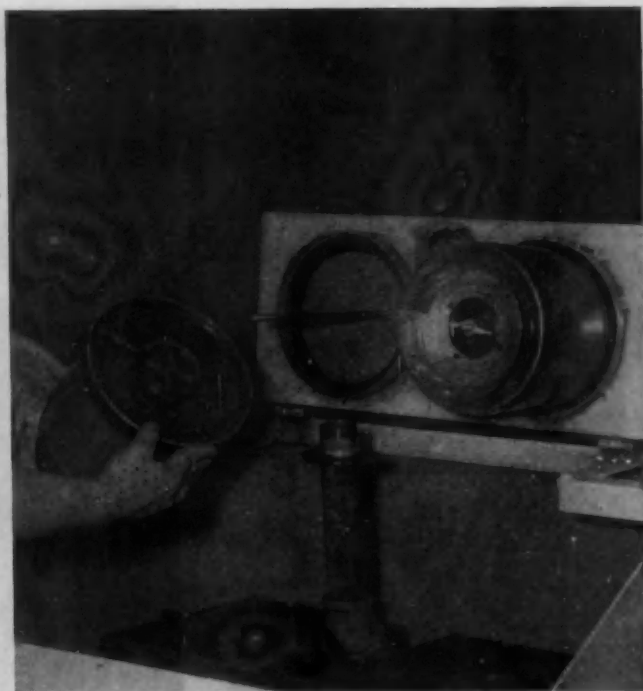






*The cleaner is now in operation with mineral spirits being forced through the filter units. Each unit is force flushed until it is thoroughly clean*

*Right. A cleaned unit which has just been flushed and will be returned to duty or stored for a quick transfer. The cleaned filters on hand give opportunity for periodic and frequent changeovers*



## Is Air

bus a mere matter  
dirty cleaner for a  
job is done in the  
check the oil in the

outfit consists of a  
(ade), a centrifugal  
brackets and con-

# Cleaner Cleaning

nections for mounting two air cleaners at a time so mineral spirits can be pumped through them at reasonably fast velocity until they are thoroughly cleaned. The cleaning fluid is forced through the elements with greater speed and in much more quantity that would be possible by

any hand cleaning method. This results in a superior job.

Extra air cleaners are provided so that the service department routine is to change air cleaners at specified intervals by replacing dirty ones with newly cleaned units. All air cleaners are machine cleaned three times

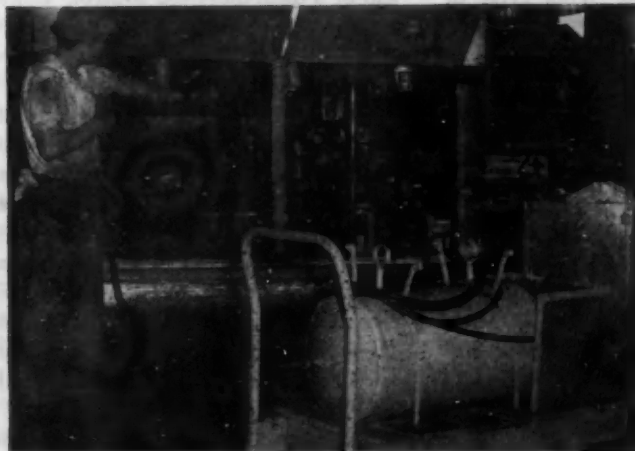
per month and at every 3000-mile inspection. Most of the engines in use in the fleet have two air cleaner units. Some 15 to 20 cleaned units are on hand at all times and the dirty units are run through the machine as fast as they are taken off.

Another service shop accessory which has proved its worth is a portable air tank. This tank is mounted on a four-wheeled dolly and is equipped with air hose, chuck for tire valves and hand valve for compressed air cleaning work. This tank is filled from the regular compressed air lines, has no compressor or motor and does not require plugging into electric lines.

(TURN TO PAGE 98, PLEASE)

*A standing directive, no valve covers may be removed from engines without first dusting thoroughly. Portable air tank is used to blow dirt off cover*

*No department is assigned to adjusting valve lash. Tappets are set wherever the bus happens to be. One shown in garage stall, the other over a lube pit*



Abbotts Dairies of Philadelphia modifies the standard Divco delivery . . . insulates cargo space; installs power-operated doors; improves flooring. A 50% saving in ice is realized, while bodies last four years longer



*Vacuum-operated doors between cargo and driver's cab save 50% in ice*



*Modifications include steel plate flooring, insulated sides, ledged doors*

## NEW BODY DESIGN Ups Dairy

THE RETAIL milk delivery business involves a lot of attention to small details of truck body design that can influence the life of bottles and cases and ultimately effect the cost of operation. In operating with the ideal truck, drivers, maintenance men and also the customers must be considered. The drivers want convenient body designs; the customers are impressed with clean, smart-looking vehicles with the sort of construction which will keep the dairy products ice cold; and the maintenance men prefer a truck which is a complement to their skills of labor. The 1000 Abbotts vehicles are built with these considerations in mind.

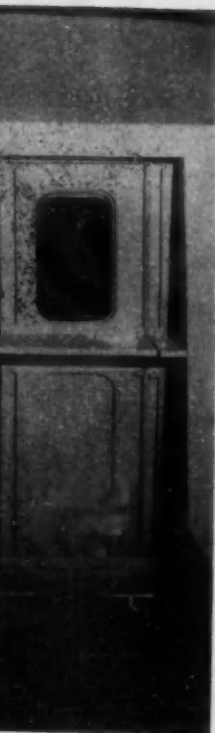
One of the most important problems is that of keeping products fresh and cold during the time the driver has the truck on the street. Standard, uninsulated bodies will do this, but at a great cost in ice and body deteri-

oration. Three years ago, Abbotts designed and built an insulated delivery body (by modifying the regular Divco body) and closed off the cargo space with a power-operated pair of doors in an effort to save ice and to keep the milk cold during the time of delivery. Results have been even better than anticipated. This type of body saves about 50 per cent on ice, increases body life from the former two years to six. It also reduces maintenance and cleaning operations to the very minimum, and a cargo temperature of 50 deg can be maintained throughout the day. By eliminating "sweating" and by improving upon the body construction, trucks are out on the routes where they belong instead of in the repair shop. More time can be spent insulating and improving new bodies instead of repairing the old ones every two years as was formerly the case.

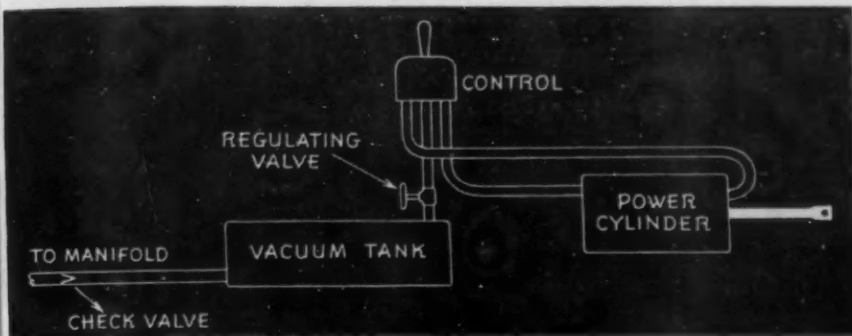
The first step in the modification plan mentioned above is to build a partition between the driver's compartment and the cargo space. Two insulated partition sections are built in this way and a center section is left for two sliding doors. These are opened under vacuum power at the flip of a dash-mounted control. Regular door track and ballbearing mountings taken from a Metro side door are used.

The power cylinder is a double-acting 4½-in. diameter vacuum cylinder with a 135-lb pull and a 6-in. travel. It is mounted on a special bracket under the body. This bracket, made from channel iron and boxed at one end, simplifies the installation, since the cylinder can be attached at the work bench and the whole assembly later mounted to the vehicle with four bolts.

The piston rod is connected to the



de steel plate floor-  
dos, ledged doors



*Above. Piping diagram of power door feature, showing lines to tank, control valve, cylinder*



*Upper right. Vacuum cylinder is mounted in channel iron and bolted to body as a unit*

*Right. Reserve tank from an air brake system is mounted in compartment at left of vehicle*

*Dash control valve opens and closes doors at a flip of a lever*

*Bottom. Case rails fit into brackets welded to body to hold cargo tight*



# Dairy Delivery Efficiency

the modification  
above is to build a  
the driver's com-  
cargo space. Two  
sections are built  
center section is  
doors. These are  
um power at the  
ted control. Regu-  
ballbearing mount-  
Metro side door

er is a double-act-  
er vacuum cylin-  
pull and a 6-in.  
ted on a special  
ody. This bracket,  
l iron and boxed  
es the installation,  
an be attached at  
the whole assem-  
o the vehicle with

connected to the

bell crank which is in turn mounted on a 1 1/4-in. shaft, protruding through the body into the driver's compartment. Bell crank is taken from a Divco clutch control arm and the shaft is a Divco clutch shaft.

Another bell crank actuates two flat iron sections which are mounted on the doors through articulating linkage in a scissors-like arrangement. Length and dimensions and location of these lever arms will vary with the installation. It will be necessary when making up this type of door, to adjust length and location to provide for sufficient travel and torque to move doors their entire width.

Two lines connect the vacuum cylinder to the dash control. Vacuum is obtained from the intake manifold with only a regular check valve necessary at this point. Since there would be a chance that engine idle would be affected by the operation of these

doors, a vacuum tank is installed under the front compartment, with a regulator valve through which the speed of the doors can be controlled.

A piping diagram is shown here. Note that two lines are necessary in this installation. In a modification, another company has installed an electric switch on the dash with solenoid at the power cylinder to actuate the control for the cylinder.

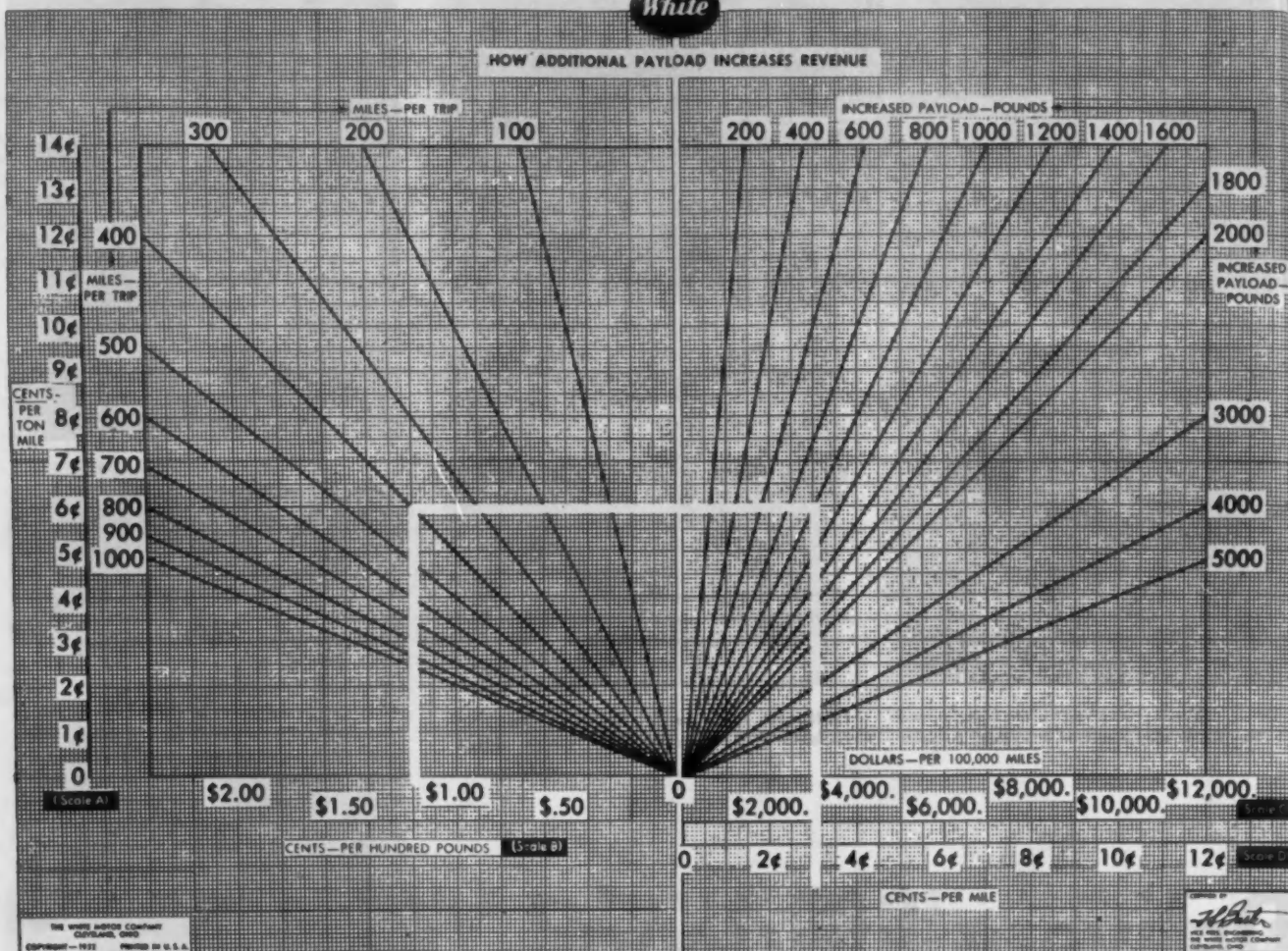
Another improvement under test at Abbots is the installation of a foot treadle operating mechanism taken from a bus. This is installed directly in front of the doors so that the driver can open or close the doors by simply stepping on the treadle.

## Other Improvements

**O**TH<sup>ER</sup> body improvements developed at Abbots include a drastically modified unit from the stand-  
(TURN TO PAGE 150, PLEASE)







**Fig. 1.** Graph shows at a glance additional revenue possible for any specific payload. Select revenue rate on Scale B; read up to radial strip mileage line; then right to radial

line on increased payload line; then downward to revenue, Scale C, or mileage saving on Scale D. Here 3 cents per mile can be saved by adding  $\frac{1}{2}$  ton

# White's Payload Procurement

**This phase of the Equipment Modernization Plan stresses equipment selection; shows**

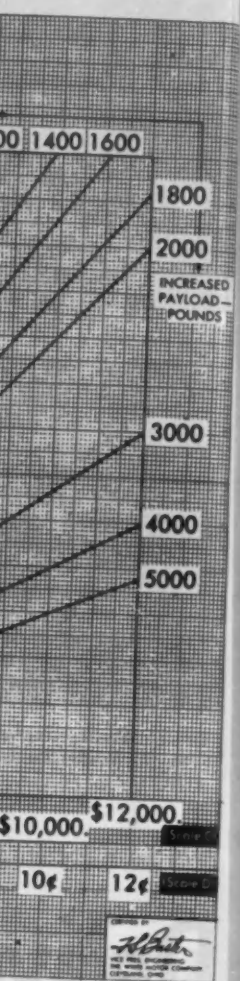
**A** NEW vehicle equipment evaluation process called the Equipment Modernization Plan has just been announced by the White Motor Co., Cleveland. Set up by White engineers in an effort to assist fleetmen to take advantage of higher payloads as well as to help them select equipment that is best suited to their requirements, this streamlined system provides a quick, factual engineering analysis of tractor and trailer, realistically

appraising its value in terms of earning power and operating cost. By means of a series of charts and graphs a truck and trailer can be specified that will haul a payload up to the legal limit—without danger of overloading any axle. This can be accomplished now in a 20-minute period—whereas formerly, with long engineering formulae, an evaluation of vehicle requirements and figuring distribution of load over the axles may have

taken hours. The plan goes further in that it provides for an accurate evaluation of the fleet's existing equipment as compared to modern equipment that is available and operating under existing conditions.

Thus two distinct phases of the copyrighted plan cover:

1. A complete analysis of the existing equipment as compared to available new equipment to determine if new equipment could provide more



Downward to revenue, D. Here 3 cents per ton

# Equipment

selection; shows

The plan goes further for an accurate fleet's existing equipment to modern equipment and operating conditions. The plan goes further for an accurate fleet's existing equipment to modern equipment and operating conditions. The plan goes further for an accurate fleet's existing equipment to modern equipment and operating conditions.

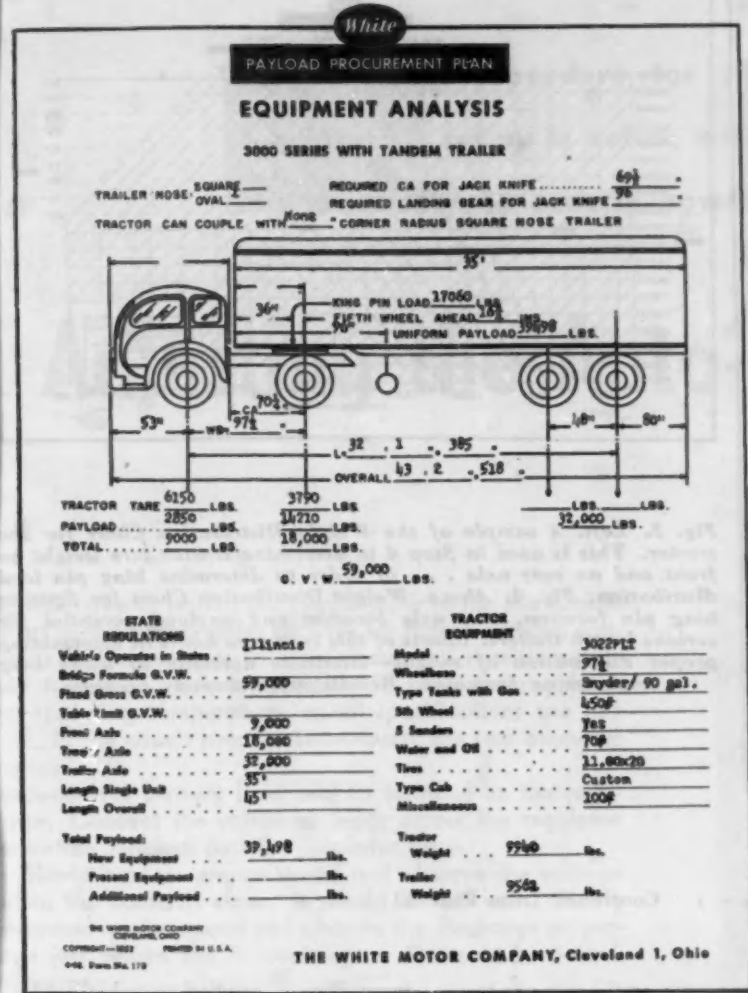


Fig. 2. Equipment Analysis Worksheet provides a guide to selecting most efficient vehicle consistent with high payload capacity and top performance ... using charts listed at right

## The plan provides for ...

1. An analysis of fleet equipment to determine if new equipment could provide additional payload.
2. An evaluation of equipment to see if fleet modifications would be practical in view of increased payload.
3. A check up of operating costs and a comparison of present costs with that of new, modern equipment designed to fit specific fleet requirements.

## With charts that offer quick reference to ...

1. Tractor weight distribution, front and rear axles.
2. Distribution of king pin load on tractor axles.
3. Weight distribution of trailers over king pin and rear axles.
4. Landing gear position for safe turning clearance.
5. Minimum CA dimension for turning.
6. Uniform payload to upset trailer on loading.

be made. Part of this study concerns itself with a comparison of costs of diesel vs gasoline power units, and this data will be presented in a later article.

## Carry More Pay Load

THE need for a quick, accurate method of vehicle selection has been apparent for many years. Operating costs have risen nearly 60 per cent over the past decade, and increased payload must be carried to offset constantly rising costs. Fleetmen, caught between high costs and state regulations in sizes and weights, have been unintentionally guilty of overloading axles due primarily to improper vehicle selection and poor load distribution. A study made by White, for instance, shows that 60 per cent of the equipment in common carrier fleets today is underloaded at the front axle. Thus, by intelligently selecting equipment that will load this axle properly—or by redesigning present equipment to take advantage of the additional load that can be put

(TURN TO NEXT PAGE, PLEASE)

# Plan Ups Fleet Profits

how higher payloads, and profit can be attained

payload for the owner within existing highway laws. This includes also a study of equipment to see if an investment in alterations in the fleet could provide sufficient additional payload to warrant the investment. In other words, guided by this Modernization Plan, a White representative can evaluate equipment in a fleet, suggest changes in rear axle placement, king pin and fifth wheel location, tractor wheelbase that will enable the fleet

to carry more payload—without overloading any axle. This can be applied to any make or model of equipment. 2. The second phase, called the Equipment Cost Guide, provides for an analysis of operating costs of existing equipment to determine the cost of fuel, repairs, tires, and depreciation. This is then compared and evaluated with the operating cost of the new and modern power units to determine what operating savings could



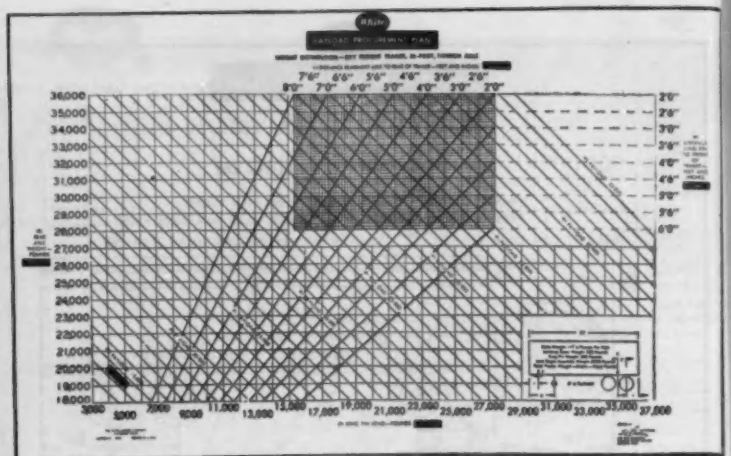
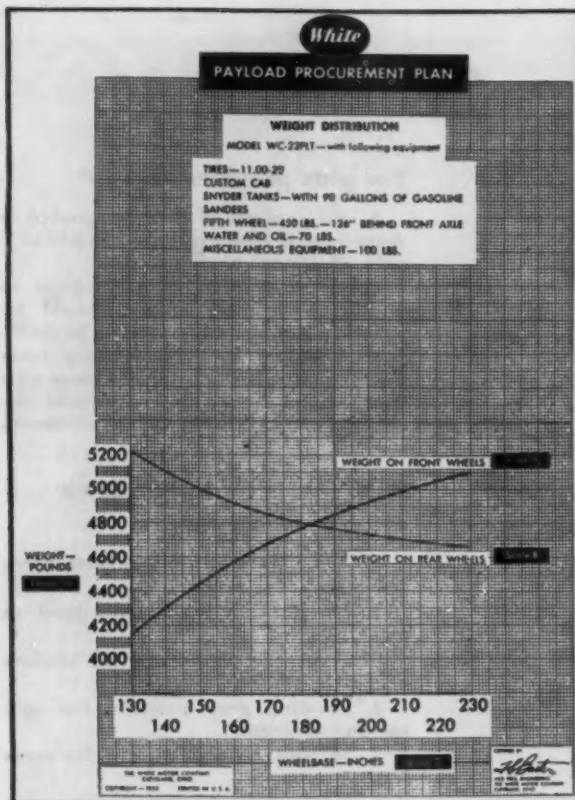


Fig. 3. Left. A sample of the Weight Distribution Chart for the tractor. This is used in Step 4 to determine tractor tare weight on front and on rear axle . . . in order to determine king pin load distribution. Fig. 4. Above. Weight Distribution Chart for figuring king pin location, rear axle location and payload potential for various length trailers. Charts of this type save hours in determining proper distribution of weight—eliminate necessity of using long engineering formulae. Results are extremely accurate

## White's Payload Procurement Plan . . . Continued from Page 61

on this axle—the fleet can increase revenue without overloading.

The advantages of developing highway unit specifications in terms of additional payload are graphically outlined in Fig. 1 which shows at a glance the additional revenue available for any specific additional payload, at various freight rates.

When the operator knows his revenue rate in cents per hundred pounds (Scale B), he can read up to radial trip mileage line; then right to radial line on increased payload line; then downward to obtained increased revenue (Scale C). For example, if freight rate is \$1.20 per 100 lb and trip covers 400 miles, read upward from Scale B to radial trip mileage line of 400 miles; then right to increased payload line showing 1000-lb increased payload; then downward to increased revenue of \$3,000 per 100,000 miles (Scale C) or three cents per mile (Scale D).

When the operator knows his revenue rate in cents per ton mile, read from the right (Scale A) to the radial line showing increased payload; then downward to obtained increased rev-

enue. For example, at 6 cents per ton mile, the revenue for 1000 lb of increased payload amounts to \$3,000 per 100,000 miles (Scale C), or three cents per mile (Scale D).

An example will illustrate the importance of payload on cost per unit hauled. One tractor trailer combination can legally haul 30,000 lb payload while another one—due to its construction and weight—can haul 32,500 lb payload legally. Both tractor trailer units are of the same make and capacity so that their operating cost per mile is the same. Taking a 300-mile trip @ 25¢ per mile operating cost, the cost per day for each one of these units is \$75.00 so its cost per cwt. is only \$0.23.

The attainment of maximum legal payload is primarily a problem of scientific application of tractor trailer equipment to exactly fit the state highway limitation over which it must operate. This problem differs for every state road law and only through engineering analysis of the equipment requirements can maximum payload be attained.

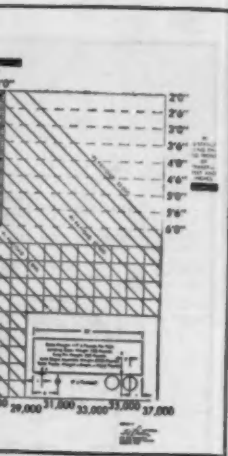
Here is how the Payload Procure-

ment Plan is applied to vehicle selection. Graphs and charts with detailed instructions provide quick reference to the following factors:

1. Weight distribution front and rear tractor axles.
2. Allowable GVW by bridge formula of various states.
3. Distribution of king pin load on tractor axles for various fifth wheel positions and wheelbases.
4. Weight distribution of various length single and tandem axle trailers.
5. Landing gear position for safe turning clearance, square and oval nose trailers.
6. Minimum CA dimension required to turn square and oval nose trailers.
7. Uniform payload to upset trailer on loading on level ground.

A series of eight charts provide the information that can be applied to any type, make or model of equipment. Weight distribution charts, properly interpreted, show the tractor weight on front and rear axle for each wheelbase. This is used to determine the weights of standard or (TURN TO PAGE 172, PLEASE)





Distribution Chart for the tractor tare weight on determine king pin load. This chart is used for figuring payload potential for hours in determining necessity of using long extremely accurate

lied to vehicle selec- charts with detailed ide quick reference factors:

tribution front and

VW by bridge for- ates.

of king pin load on various fifth wheel elbases.

tribution of various and tandem axle trailers. r position for safe , square and oval

CA dimension re- square and oval nose

load to upset trailer el ground.

t charts provide the can be applied to r model of equip- istribution charts, d, show the tractor and rear axle for This is used to de- ts of standard or E 172, PLEASE)

AL, September, 1952

Step by step procedure for checking and setting regulators is set up in detail, with illustrations showing the mechanic exactly how adjustment is made

# Adjusting the Auto-Lite Regulator

Data and photos courtesy Electric Auto-Lite Co.

**F**IRST step in testing the regulator, is to run the engine at about twenty miles an hour for fifteen minutes with lights and accessories totaling about half maximum output turned on. This is necessary to bring the regulator to operating temperature, as all specifications are hot

1. In the circuit breaker test—insert the test ammeter

valves. between the battery lead and its terminal on the regulator. Connect the voltmeter leads across the regulator armature terminal and the regulator base.

Slowly increase engine speed and observe the voltage when the contacts close. It should be 6.5 volts. Slowly decrease engine speed and observe the discharge amperage just before the contacts open. It should be 4 to 6 amperes.

2. Voltage regulator test. Shift the voltmeter lead from the armature terminal to the battery terminal. With the engine running at about twenty miles an hour, turn on lights and accessories to obtain slightly more than half the maximum hot output. Then adjust the resistance to obtain exactly one-half the maximum. At this point, the voltage should be a steady 7.3 volts.

3. If voltage is high, momentarily disconnect the field lead. Output should immediately drop to zero, providing the condition is due to the regulator and not to a grounded generator field circuit. If output does not drop to zero, check the generator and field lead.

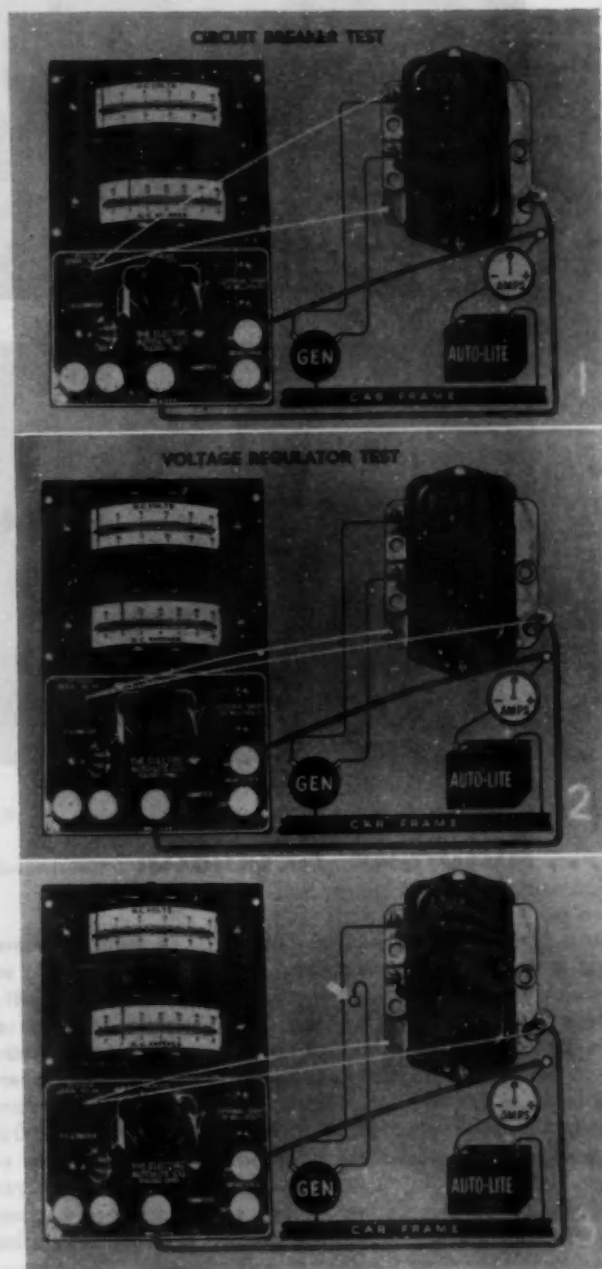
Currently limiting regulator test. Connect a one-thousand-watt carbon pile across the battery. This will allow us to discharge the battery permitting the generator to operate at regulated output.

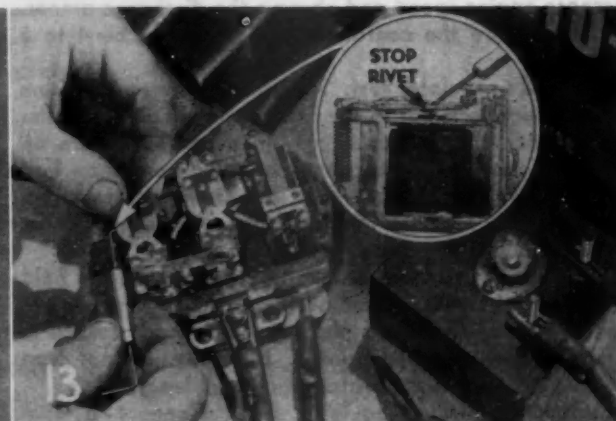
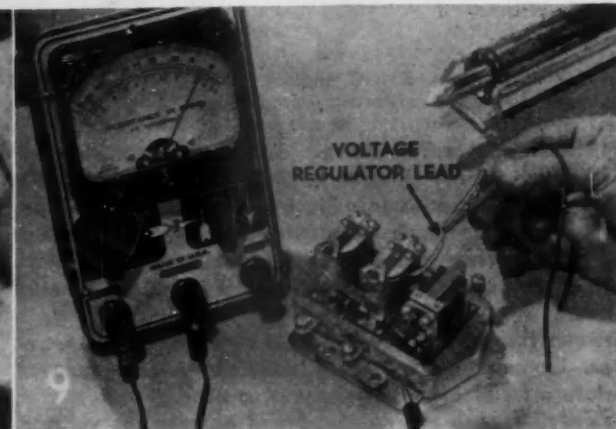
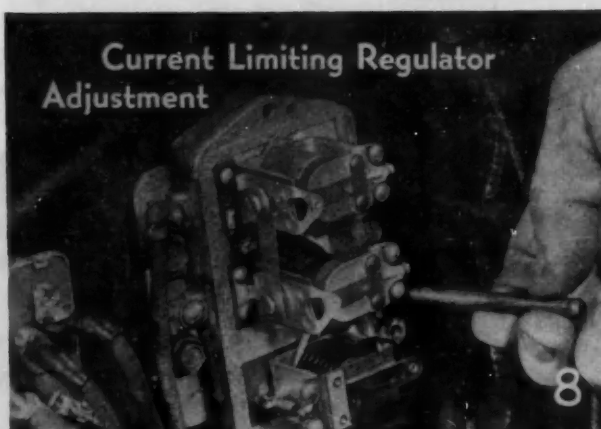
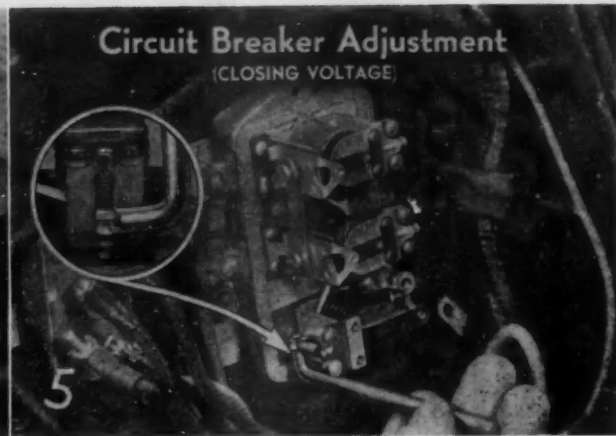
Hook-up is the same as before. With the engine running at about twenty miles an hour, adjust the carbon pile to reduce voltage to 6.8 to 7.0 volts. Output should hold steady within one ampere of the hot maximum.

If the current limiting regulator is temperature-compensated, operate at full charge for fifteen minutes before checking. At the end of this period, amperage should have fallen to within one ampere of the hot maximum.

4. If any of the units do not test within limits or do not hold steady values, stop the engine. Disconnect the battery terminals and remove the cover. Clean contacts with linen tape, using first a length saturated with carbon tetrachloride and then a dry strip. Be sure no fragments remain between the contacts.

If contacts are burned or rough, carefully dress with a (TURN TO NEXT PAGE, PLEASE)





## ....Auto-Lite Regulator

Continued from Page 63

clean No. 6 Swiss equaling cut file held parallel to the armature. Then reclean with tape. Install the cover, connect the battery lead and operate at about half maximum output for a few minutes. Then recheck unit settings. If still not within limits, adjustments are indicated. Again remove the cover and disconnect battery lead.

5. To adjust the closing voltage of the circuit breaker, change the spring tension by bending the lower spring

hanger as shown. Increasing tension raises closing voltage.

6. To adjust the opening amperage, increase or decrease the contact gap. Decreasing the gap lowers opening amperage. Keep the contacts square, and in no case decrease to less than .015 of an inch.

7. On the voltage regulator, increase or decrease the spring tension as shown. Increasing the tension raises the maintained voltage.

8. The current limiting regulator is

adjusted in the same way as the voltage regulator. Increasing the spring tension raises the current limiting setting.

After making an adjustment on any unit, replace the cover and run for a few minutes to normalize temperature before checking. The cover must always be in place when checking settings. It has an effect on the magnetic field and also controls temperature. If correct settings cannot be obtained by cleaning or adjust-

Adjustment

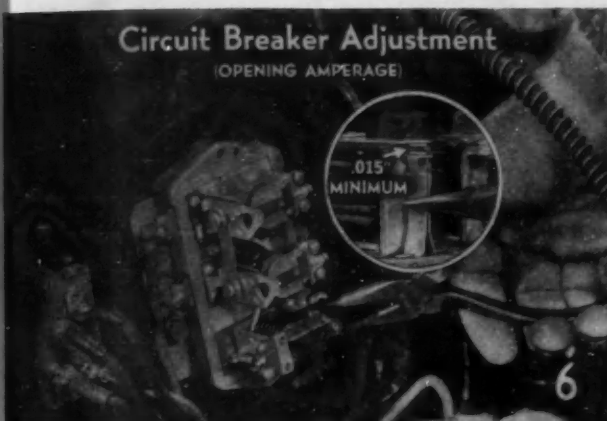


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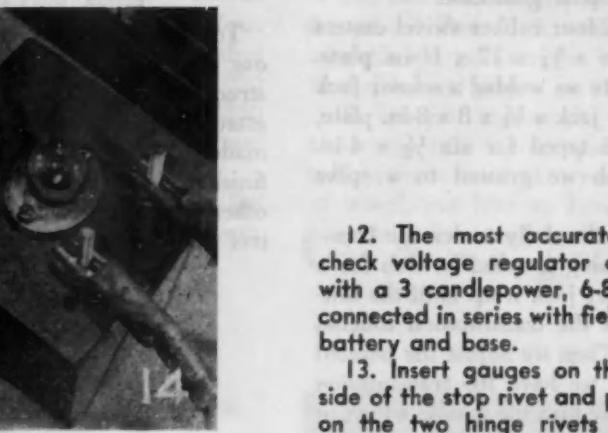
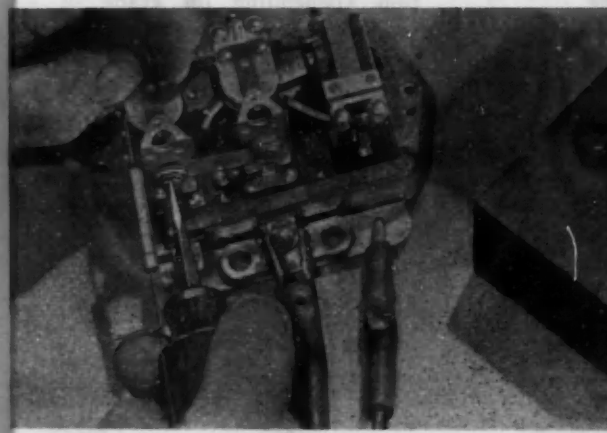
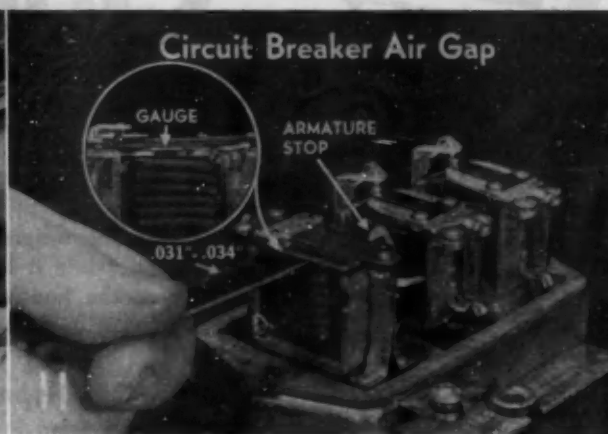
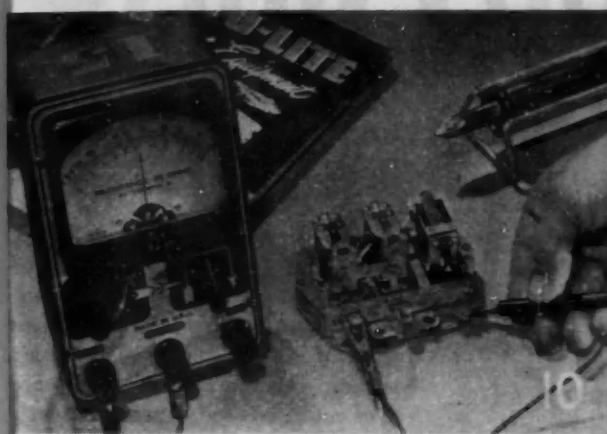
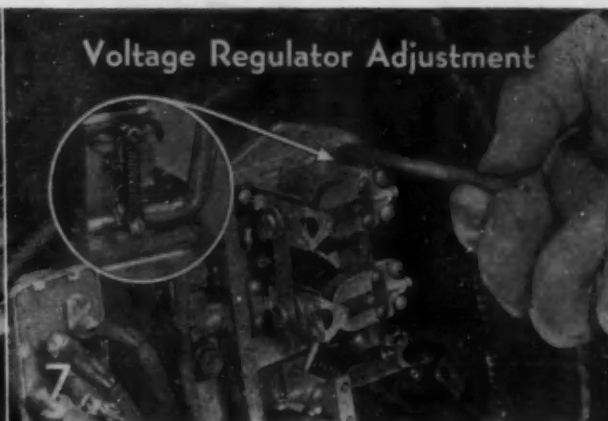
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NAL, September, 1952

## Circuit Breaker Adjustment (OPENING AMPERAGE)



## Voltage Regulator Adjustment



ment, remove the regulator. Inspect for signs of mechanical failure, burning or failure of the insulation.

9. Unsolder the voltage regulator lead from the circuit breaker yoke. Then, using the ohmmeter, check the resistance of the voltage regulator winding as shown.

10. Also check the resistance of the circuit breaker shunt winding as shown. If both this and the voltage regulator winding resistance are within manual specifications, resolder the

lead. If not, replace the regulator assembly.

Check the resistors. If the resistors do not check within the values shown in manual, remove and replace. The next and final check is on the armature air gaps. Refer to the manual for gap specifications, and check as follows:

11. Circuit breaker air gap must be measured at the hinge side of the core. Adjust by bending the armature stop.

12. The most accurate way to check voltage regulator air gap is with a 3 candlepower, 6-8 volt bulb connected in series with field terminal battery and base.

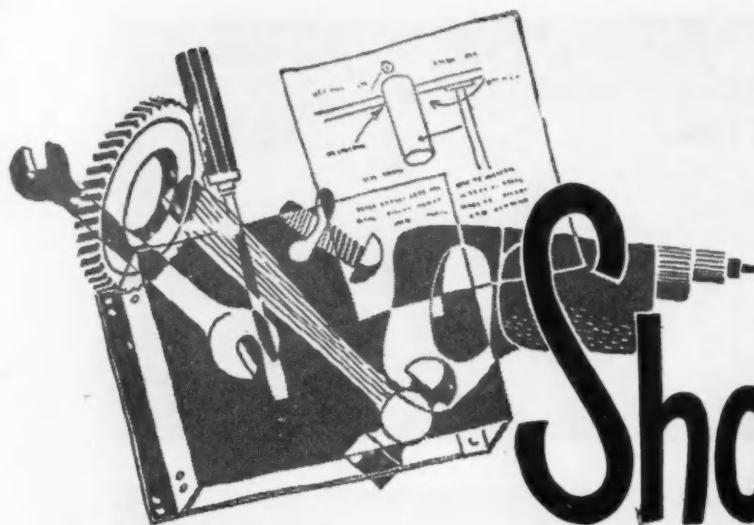
13. Insert gauges on the contact side of the stop rivet and press down on the two hinge rivets as shown. The light should burn normally with the larger gauge and dim or go out with the smaller.

14. To adjust the air gap, loosen the contact attaching screw and slide the bracket up or down. Be sure to keep the contact faces square.

Current limiting regulator air gap is the same as on the voltage regulator and is checked and adjusted in exactly the same way.

Install the regulator. Use extreme caution in connecting wires to the regulator so that the battery lead is never allowed to touch the field terminal as this will overheat the movable contact reed and render the unit unfit for service. Reheat the regulator and again check unit settings.





# Shop Hints

## 1. Transmission Dolly

By Bob Wise  
Fayetteville City Shop  
Fayetteville, Arkansas

Any mechanic can readily see the advantages of this transmission dolly. With it one man can easily remove and replace any heavy truck transmission or transfer gear case.

We used four rubber swivel casters mounted to a  $\frac{1}{4}$  x 12 x 16-in. plate. On the plate we welded a scissor jack and on the jack a  $\frac{1}{4}$  x 8 x 8-in. plate, drilled and tapped for six  $\frac{1}{2}$  x 4-in. bolts which we ground to a spike point.

We roll the dolly under the transmission, using a speed wrench for a jack handle; jack it up until the lowest part of the transmission touches the jack. Then we adjust the pointed bolts until we have the transmission cradled. We turn the handle a turn or

two to take the weight; unbolt the transmission; slide it back until the shaft clears the housing and lower jack and roll it under the truck.

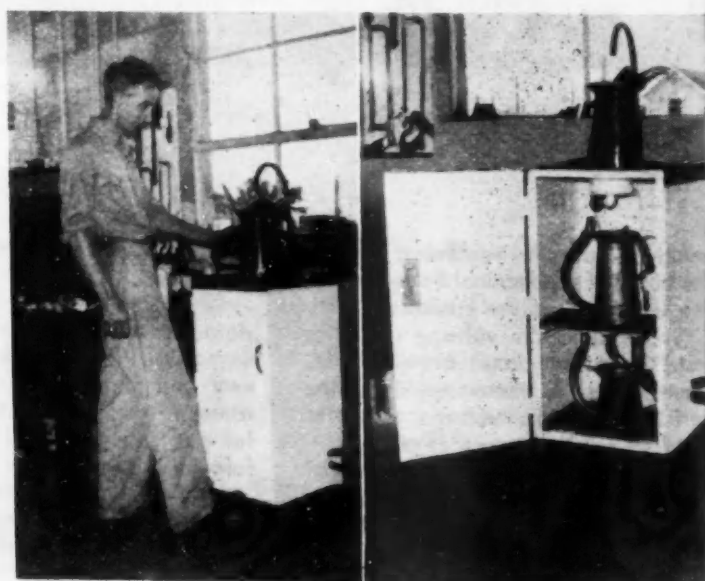
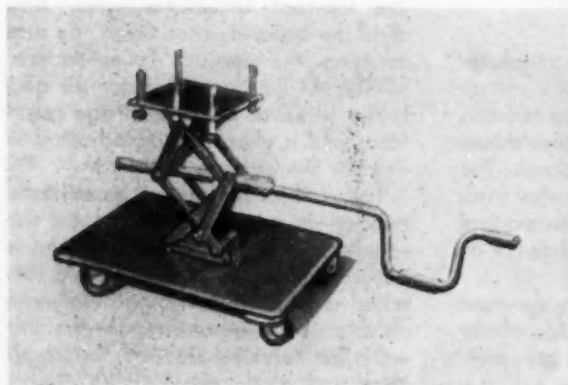
## 2. Oil Dispenser

By Clinton B. Baker, Shop Foreman  
State Roads Commission  
Easton, Maryland

To conserve shop space and to keep our lubricating oils clean, we constructed the dispenser as shown in the attached photos. The cabinet was made of sheet metal and angle, then finished in enamels to match our other greasing equipment. The control valves are Alemite and are oper-

ated by a foot treadle to permit easy control and leave hands free. The knob on the back panel is the selector control; ours is three position for two grades of oil and a neutral position; however, this is optional, as more valves could be used if necessary.

To operate, move the knob to position (depending on grade of oil wanted) place measuring cup under spout and press foot treadle—oil is forced in from remote storage by air operated fluid pumps. Any drippage is caught in strainer in top and runs through hose to container. The cabinet has two shelves to store the measuring cups.



CCJ pays **\$10** for each shop hint published; **\$25** for what editors consider exceptional. Is your name here? Let us hear from you with your suggestion for a new tool, new technique, shop-designed or home-made gadget that will assist other mechanics in vehicle maintenance.

## FROM FLEET SHOPS

### 3. Boring Bar Modification

By A. W. Rauh, Supt. of Maintenance  
El Paso City Lines, Inc.  
El Paso, Texas

Due to the fact that our boring bar has four catspaws, and the liners have 15 large holes, one of the catspaws would pass by one of the holes and by not being long enough would drop into the hole and throw the bar off center causing a bad boring job. We devised the following improvements.

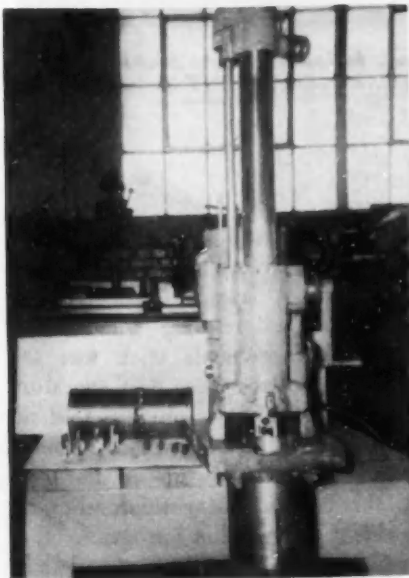
Taking four No. 2 catspaws we ground a flat surface on each where they contacted the cylinder wall. Then we selected tool steel, the same width the catspaws, and 7/16 in. thick by

2 in. long and sweated these on the catspaws.

The screw holes for attaching the catspaws to the bare catspaws were then drilled and counterbored in the new longer shoes the same as in the standard catspaw shoe.

Making a mandrel the same size as the bare catspaws we placed the four prepared catspaws on the mandrel and ground them in the lathe to .030 smaller than the standard 4.250 sleeve. They were then hardened and polished.

By using a rigid holder for the liners we are able to turn out smooth and straight jobs.



### 4. Wheel Dolly

By J. H. Burruss, Maintenance Supt.  
Arkansas Motor Freight Lines  
Fort Smith, Arkansas

Starting with two 1 1/4-in. solid rods 20 in. long, then welding two pieces of angle iron, 1 1/2 in., 20 in. long, with a 10-in. space between the points, and using No. 1306 Hyatt roller bearings as wheels, Maintenance Supt., J. H. Burruss of Arkansas Motor Freight Lines, Fort Smith, Arkansas, produced a wheel dolly which works perfectly for pulling dual truck wheel.

### 5. Tire Tool

By Bert Clark, Manager Tire Dept.  
Hill Lines Inc.  
Amarillo, Texas

Here is a tire tool that does away with the hammer and chisel and getting down on your knees when you want to remove tire from a solid rim or Budd wheel (not for use on a split rim).

The tool is made of 1 1/2-in. pipe, a 1-in. hard steel shaft, and a section of rubber hose over the end of the shaft for hand grip.

To use you remove the lock from the wheel, turn it over, put wedge of tool between bead of tire and flange of wheel, put foot on brace arm to keep from bouncing, and bump with solid shaft. That's all there is to it.



# Retrospective Insurance

Cuts Accidents

Ups Profits

But the plan will work only when backed up with the best in accident-prevention programs. Pennsylvania panel sums up the gains when a fleet can "bet on its own performance"

AT a recent meeting of the Pennsylvania Motor Truck Association, a more-or-less usual panel of experts came up with a better than usual dosage of good advice for the larger fleet operator. The discussion centered around the workings of an insurance program variously known as the Retrospective Rating Plan, "Plan D," or the Automatic Premium Adjustment Plan. Not only were full details of the insurance program outlined, but also three well-known fleet operators supported the evidence with statistics from their own operation that showed clearly how the system pays off.

## How the Plan Works

KEY man on the panel was Isaac Roach of Hutchinson-Rivinus & Co., a large insurance brokerage in Philadelphia. Mr. Roach led off by explaining how the retrospective rating plan actually works. An example which he used is outlined in brief by the chart and description on the opposite page. Very basically the plan sets up a carefully calculated annual insurance premium figure. That becomes par for the course. From then on it's entirely up to the fleet. If the accident record is good, the fleet gets a rebate. If it is bad, it pays an ad-



Seated panel, l. to r. and identified in text, includes Messrs. Smith, Crossett, Roach and Sechritz. Moderator Harold Shertz, standing, is PMTA's legal counsel

ditional premium. Thus in effect the fleet is betting on its own performance.

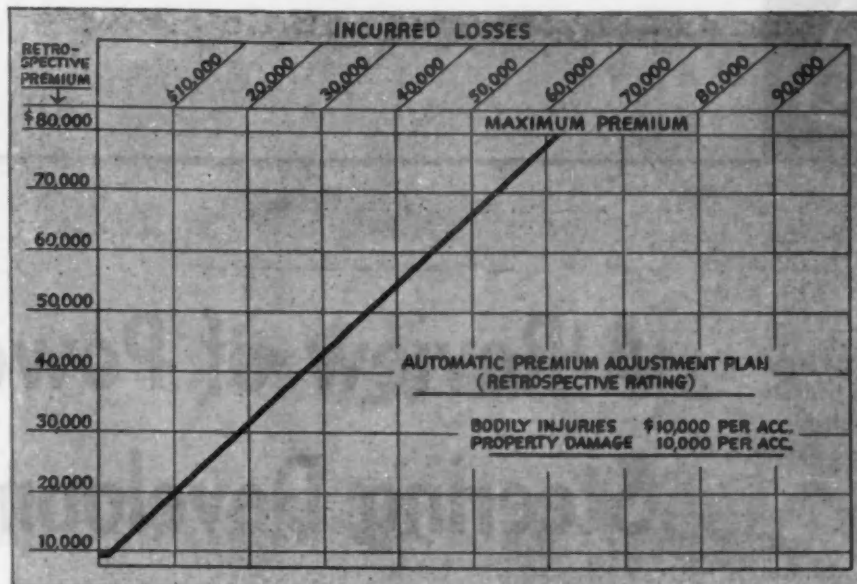
Put another way, the plan accelerates premium savings for good performance and conversely, it "hits you over the head" for bad performance.

Mr. Roach explained that the plan can include or exclude Workmen's Compensation insurance but invariably covers liability. It can be written in modified form for either self-insur-

ance or a cost-plus plan subject to minimum cost and maximum cost.

While Mr. Roach's data were in themselves impressive, what really made the arguments stick was the discussion of the three fleet operators who followed. It is obvious that no such plan as this will work without a conscientious follow-up on the part of the fleet operator to develop an accident prevention program that really works.





For example, here's how it works . . .

WHILE no two retrospective insurance plans are alike, the above chart gives an idea of how the plan works out. Let's assume that you are a for-hire carrier operating 4,000,000 miles a year, with a gross revenue of \$2,000,000, you do not include workman's compensation, and you elect to self-insure up to \$10,000 per accident.

Then your standard premium would be approximately \$40,000 per year (computed at a rate of one cent a mile), equivalent to a revenue rate of 2 per cent.

Now let's assume your incurred loss for the policy period amounted to \$20,000. By reading the chart, your retrospective premium amounts to \$32,000 and you are entitled to a refund of \$8,000.

The actual premium at the end of the year is computed by multiplying the total loss by a loss conversion factor applied to provide for claim handling expenses, in this case 1.16. \$20,000 x 1.16 amounts to \$23,200. To this is added a basic premium covering administration and other overhead, amounting here to 22 per cent of the standard premium or \$8,800. The total (\$23,200 plus \$8,800) amounts to the \$32,000 shown.

As the chart shows, if losses incurred amounted to \$27,000 you would just about break even. If the losses went higher, the chart shows the actual premium you would pay up to a maximum of \$80,000. Such a ceiling (200 per cent of the standard premium) is usually incorporated in the policy.



Smith, Crossett,  
A's legal counsel

#### A 12-Point Program

THUS it fell to the next man on the panel to outline a twelve-point accident prevention program that is really complete. The man was W. Robert Smith, then General Manager of Ward Trucking Corp. of Altoona. The barest outline of his plan follows:

1. Careful selections of drivers.
2. On the road driver training, usually following the practice of up-

grading from local driver to pedal run driver and finally to road driver on the basis that local drivers can be more carefully supervised.

3. Careful road observation of drivers by both the company's own safety patrol and that of the company's insurers.

4. A cash bonus amounting to \$5 a quarter and \$25 for a full year without a preventable accident. There is also an annual award emblem.

5. A joint employee management committee, with employees selected on a rotating basis, that fixes accident responsibility and determines eligibility for the safety bonus.

6. Each driver is individually assigned to a single truck or tractor. Awards are made for conservation, such as a \$50 savings bond for obtaining 100,000 miles of service on driving wheel tires. If a driver mis-

(TURN TO PAGE 110, PLEASE)

plan subject to maximum cost. s data were in ve, what really s stick was the e fleet operators obvious that no work without a up on the part to develop an program that



# A Review of Power Steering Developments

**T**HERE are, at present, three primary types of hydraulic power steering system in common use. There are seven basic components that go to make up any of these servo mechanisms; steering gear, pump, relief valve, control valve, actuator, reservoir and hydraulic lines:

(1) Mechanical steering gear through which steering wheel motion is transmitted.

(2) Oil pump to supply oil to system. Usually driven from front end of engine.

(3) Maximum pressure valve to protect pump, lines and steering linkage from overload (as a fuse in an electric circuit).

(4) Control valve to direct oil to actuator in direction and amount in exact response to steering wheel movement. This is often called a "servo" valve because it accurately controls the application of great power in response to a small power input signal. These valves are generally of the "open-center" type which means that when the steering system is satisfied or neutral, oil from the pump circulates freely through the valve and back to the reservoir with negligible power loss.

(5) Actuator (almost exclusively a double acting hydraulic cylinder) to convert power from oil under pressure to mechanical power, and transmit this power to the steering system as directed by the servo control valve.

(6) Oil reservoir containing oil supply for pump. This must be sufficiently large to handle maximum system displacement and to dissipate heat generated in oil due to small energy losses in system.

(7) Hydraulic lines (hose, tubing, cored or drilled passages) to allow oil communication to and from the various components. Often referred to as plumbing.

All of the current systems provide for automatic return to manual steering in case of unlikely failure which might be caused by a broken pump drive belt, ruptured line or engine failure (as when being towed).

In any of these systems wherein the installation has been properly engineered to the vehicle in all respects, the incidence of power steering failure is almost nil and

**W. F. Driver, of Vickers, Inc., discusses integral power gears, internal linkage and split linkage type units**

is probably less likely than that to be expected from the brake system of an automobile where pressures encountered are considerably higher.

The three primary types of hydraulic power steering systems are:

## Integral Power Gear

Has control valve(s) and power cylinder mounted integral with mechanical steering gear. Valve is actuated by steering shaft movement. Power from piston is transmitted directly to pitman shaft.

Advantages are in simplified plumbing, having all lines integral except one from pump and one back to reservoir; and in relatively simple engineering required to adapt to an existing design merely by using in place of conventional gear.

Disadvantage is that road shock is transmitted directly back to the steering gear, and in some installations length of drag link requires careful engineering to preclude excessive drag link deflection. These conditions are also true in the case of any conventional mechanical gear.

This type of gear is manufactured by and is currently being used in production as follows:

Saginaw Steering Gear Division of General Motors—Heavy duty equipment and Cadillac, Old-mobile and Buick passenger cars.

Ross Gear and Tool Company—Heavy duty equipment.  
Gemmer Manufacturing Company—

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These articles were excerpted from papers presented at the SAE West Coast Meeting, San Francisco, Aug. 11-13

# LP Gas and Its Adaptation to the Fleet Field

**J. E. Glidewell of Hall-Scott Div., outlines advantages of liquefied petroleum fuel, explains how carburetion equipment functions**

**V** SINCE you are seriously considering the use of LPG as fuel for your truck, bus or industrial type engine, you are interested in its characteristics, handling and use. You are quite right in adopting this fuel because of the possibility of getting increased power output, economy of operation and lower cost maintenance.

First, considering the fuel itself, it is just one of the many products obtained from petroleum. LPG or Liquefied Petroleum Gas is composed of those lighter cuts of crude oil which won't stay in an uncorked bottle. These constituents are chiefly those chemicals known as butane and propane, with some iso-butane, possibly propylene and smaller amounts of other "anes" and "enes" together with slight amounts of entrained oil, etc., which are present to justify use of filters and sediment traps.

Liquefied petroleum gases are, as the name implies, normally gaseous at ordinary temperatures and are therefore most economically stored and transported in the liquid state under moderate pressures. LPG has been used as a motor fuel for the past twenty or twenty-five years and was commonly known as commercial butane. Butane is normally a liquid below about 34 deg F at atmospheric pressure while propane is a gas down to about 44 deg below zero. This means that a lower test tank can be used for butane; however, some propane must be used with it in order to bring pressures up to a safe value, especially in winter season use. For commercial butane consisting largely of butane, although propane percentage may run from 10 per cent to about 50 per cent, tanks of

125 lb pressure rating have been used. In the last few years, however, the constituent butane has been used more and more for such purposes as making synthetic rubber, improving the fuel known as gasoline, etc., and propane has been obtained in increasing quantities.

Therefore, LPG is tending toward higher percentages of propane, which fuel having a vapor pressure at 100 deg F of about 180 to 190 lb requires tanks and containers of 250 lb rated pressure capacity. Such tanks are necessarily heavier than tanks of same fuel capacity as used for gasoline because of the higher pressures carried. Also, due to the higher pressures, the tanks are built with cylindrical section and rounded ends. The ratings, capacities and pressures are regulated by National Board of Fire Underwriters and also by various State agencies. Such regulations are well enforced, especially on buses.

If an operator can put in his own storage facilities enabling him to buy direct from a refinery in appreciable quantity, a very favorable fuel cost can be readily obtained. Buying direct in quantity also insures getting fuel to more uniform specifications.

Butane has an octane rating of 90 while propane has an "octane rating" of 110 to 125. Therefore, a higher compression ratio can be used with propane which, other things being equal, should result in increased power output and improved fuel economy. The higher compression ratios, suitable for propane fuel, cannot be safely used unless it is assured that fuel supply will be

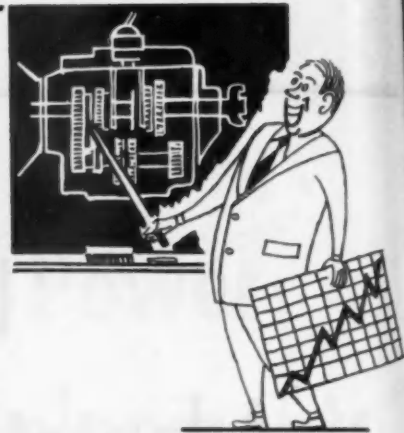
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# More Miles from Transmission Bearings

**E. J. Barth, of Spicer and T. Backus, of Fuller Mfg. Co. show how heavy-duty bearing life can be improved through careful diagnosis of failures and good PM procedures**



**I**T IS not sound practice nor an economical procedure to do extensive remachining on a case when rebuilding a transmission. Production tooling and machine equipment required for accuracy cannot be duplicated in the field.

A transmission case mutilated to such an extent that the faces need refinishing, holes rebored and sleeved for proper bearing fit, has generally seen enough service to require some replacement of gears, bearings and shafts. In the heavy-duty transmission this is expensive material to trust in a questionable case.

The flywheel pocket bearing is subject to abuse at assembly when endeavoring to insert the drive gear stem into the pocket bearing in the flywheel. Even though a dummy shaft is used to center the clutch driven disc hub with the pocket bearing, care must be taken to determine that the drive gear is centered properly and the bell housing piloted on its snap fit before tightening the housing screws.

When assembling or rebuilding a

transmission, a check should be made that the proper drive gear is used with the engine flywheel and pocket bearing as specified, to make sure that there is sufficient room for the bearing without crowding or end loading.

We should not pass by the clutch pilot bearing without commenting on the importance of alignment between the center of this bearing and the centerline of the mainshaft in the transmission case.

Misalignment in this location is the result of the accumulation of machining errors in the engine block, the flywheel housing, the transmission bell housing, and the transmission case.

Excessive misalignment could cause noisy head end gears, gear hopping out of direct drive, or hard shifting. However, this misalignment becomes more important to us in this discussion because of its effect on the rear drive gear or front main bearing, and to a greater extent on the mainshaft pocket or pilot bearing.

The front main bearing in the unit transmission must be positioned in

the case by snap rings and retainers or both. On the drive gear it must be held against a shoulder by a snap ring or lock nut arrangement. This is necessary to locate the gear and hold it in its proper position. The bearing must have radial capacity to handle the drive gear loads and those transmitted to it through the mainshaft pilot bearing when the transmission is in gear. It must also have sufficient thrust capacity to handle the helical gear thrust loads of the drive gear. As previously indicated, it is subject to misalignment. Excessive misalignment will result in bearing separator failure.

The mainshaft pilot bearing is undoubtedly the most difficult bearing problem in a transmission. Since it must assemble into the bore of the drive gear, its size is limited because it controls not only the minimum number of teeth in this gear but also the size of the dog clutch engaging direct drive. Yet this bearing must transmit its share of the mainshaft gear loads to the main drive gear bearing and since the faster ratios which are used most of the time are nearer the pilot bearing than the mainshaft rear bearing, this bearing takes most of the radial load under normal operating conditions. To make its job tougher, it must operate subject to the conditions of misalignment referred to previously. Because of the masking effect of the

(TURN TO PAGE 126, PLEASE)

# Free

## PUBLICATIONS

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### L11. Safety Regulations

Interstate Commerce Commission, Motor Carrier Safety Regulations, revised April 14, 1952 and effective July 1, 1952, have been published as a service to truck operators affected by the Berg Mfg. & Sales Co., Inc. The book contains 136 pages and is permanently bound with long lasting cover to allow everyday reference. Write L11 on the postcard for your copy.

### L12. Financial Planning

Ways and means to promote economy and improve accounting methods are outlined in detail in a booklet just published entitled, "Forecasting Financial Requirements for Motor Carriers."

The booklet, written by O. L. Doud, vice president of Roadway Express, Inc., describes how to prepare and use an operating budget. Ways to plan and project five-year financial forecasting are also explained, as well as how to conserve and build up cash working capital.

Examples of sample forms and systems illustrate the text. Send for your copy by writing L12 on the postcard.

### L13. Plant Safety Study

"Reducing Accident Costs Through Safe Working Conditions" is the second in a series of six management aid leaflets on plant safety written by the Safety Engineering staff, Bureau of Labor Standards, Department of Labor, in cooperation with the Small Defense Plants Administration.

It discusses plant inspection, planning layout, housekeeping, maintenance of plant, equipment and machinery, handling materials, electrical hazards

and safeguarding machinery. Your copy available by marking L13 on the postcard.

### L14. Spark Plug Chart

Just published, a four color wall chart covers specifications for all types of spark plug installations. It also includes correct procedures for installing and servicing spark plugs.

Spark plugs specifications are listed for domestic and foreign passenger cars, trucks, busses, tractors, combines, farm machinery, garden tractors, power mowers, marine engines, outboard engines, motorcycles, bicycle motors, contractors' machinery and industrial equipment. Mark L14 on the postcard for your copy.

### L15. Steel Tubing Manual

Entitled "How to Fabricate Welded Steel Tubing," a well illustrated, 28-page manual is divided into ten major processes—cutting, deburring, bending, swaging, special tube-end forming, punching and notching, drilling, joining, cleaning and finishing.

Each section describes the various methods used in performing each operation with a brief statement on the advantages and technology of the methods. Illustrations include 36 actual operational photographs, several line drawings and two charts showing standard bends with and without mandrels.

Typical of the detail covered, the first section describes tube cutting by hacksaws, lathes, abrasive cut-off wheels, circular friction saws, shear cutters and disc cutters. Your copy is available by marking L15 on the postcard.

### L16. Apprentice Guide

Publication of a pamphlet describing requirements and procedures by which industry apprentices may qualify for deferment from Selective Service has been announced by the Defense Transport Administration.

Entitled "DTA—Manpower, No. 5, 'Deferment of Apprentices,'" the booklet is being distributed to all industries, national and international unions interested in domestic transportation. Get your copy by marking L16 on the postcard.

### L17. Fuels & Lube Study

Reprints from the publication, *Lubrication*, of two extensive articles on truck and bus fuels and lubricants have been made available. The first, a 12-page report, covers gasoline, diesel fuel and LP-gas, with a discussion of performance characteristics and effect on engine maintenance and wear. The clearly written text covers such topics as Octane Rating, Pre-ignition, Volatility, Starting Aids and Fuel Improvers, Cracked Fuels, etc., as they affect engine efficiency.

The second reprint, 16 pages, presents an equally readable report on the problem of lubrication. Opening with a summary of the various types and grades available, it discusses the selection of an engine oil and engine bearing failure in relation to lubrication. The latter part covers conventional and hydraulic transmission, rear axle, chassis, fifth wheel, steering gear, wheel bearing, universal joint and spline shaft lubrication.

Both reprints are well illustrated with photographs and quickly read charts and tables of characteristics. To obtain copies for your use, mark L17 on the postcard.

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lot bearing is un- difficult bearing mission. Since it the bore of the s limited because y the minimum his gear but also clutch engaging his bearing must of the mainshaft main drive gear the faster ratios of the time are bearing than the ng, this bearing dial load under conditions. To it must operate ditions of mis- eviously. Be- g effect of the 26, PLEASE)

# NEW Products

ADDITIONAL DETAILS AVAILABLE UPON REQUEST VIA POSTCARD

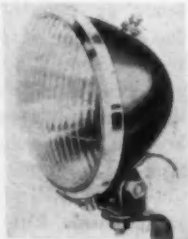


## P95. Lubricating Gun

Operating from a 2½-in. diameter, air motor operated pump with a 50 to 1 pressure ratio, a new high pressure portable lubricating gun, model 972, handles 25 or 50 lb original refinery packages on a base equipped with four swivel type castors. The gun delivers lubricant on both the up and down strokes through a 6-ft hose assembly. Access to the pump is provided through a removeable air motor cover. Lincoln Engineering Co., St. Louis, Mo.

## P96. Double Duty Light

For use on truck and farm tractors, a new double duty 5-in. diameter rear light using a 32 cp bulb for a flood light and a 1½-cp bulb for a red tail light has been announced by the Do-Ray Lamp Co., Chicago, Ill. Conversion from the flood light for yard service to the red light for highway use is accomplished by a switch located in the top of the reflector housing.



## P97. Portable Air Tools

Midget sized, air driven screwdrivers and nutsetters have been added to the line of Master Pneumatic Tool Co., Inc., Orwell, Ohio. Rated for driving screws up to size 12 and nuts and bolts up to ¼-in. diameter bolt size, they are equipped with either lever or pistol type throttle handles and have spindle adapters for both screwdriver bits and nut socket adapters providing a range of 36 different models. Operating on air pressures of from 80 to 100 lb, they have three types of clutch mechanisms adaptable to three different free speeds, 580, 1200 and 2400 rpm. They weigh from 1 13/16 to 2½ lb.

## P98. Ignition Timer

"Plug-in" repair by the user instead of return to the factory is a feature of a new ignition timer produced by E. Edelman and Co., Chicago, Ill. Replacement units for parts which most commonly need repair are available from authorized jobbers or local radio-TV repair shops. A newly styled, replaceable "flash tube" and built-in power amplifier produce a light beam usable in daylight without having to paint or chalk the timing mark. It comes with five-foot leads tipped with heavy-duty terminal clips and is mounted in a steel carrying case.

Timer can be hung on the tie-rod, stood on the ground or placed on the fender. It operates directly from the vehicle's 6-volt battery in timing, checking, adjusting and synchronizing.

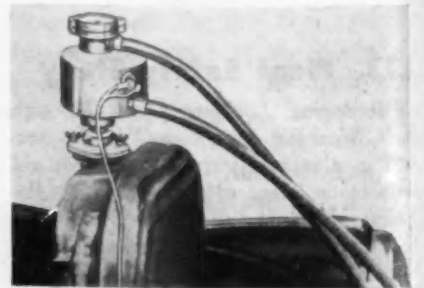


## P99. Wheel-Guard

Moveable to any job in the shop or carried as service truck equipment, a new product called "Wheel-Guard" is designed to eliminate the hazard of rims and rings flying off truck and bus tires in tire servicing. It is adjustable to any size tire or type of rim. Myer's Tire Supply Co., Akron, Ohio.

## P100. Chemical Cleaner

Readily attached to the filler neck of any car or truck, a new cooling system cleaning device is ready for operation in two minutes without the necessity of removing thermostats or hoses. It can be left to operate unattended. A special chemical is introduced into the mixing chamber, and by running the engine for about 45 min, the chemical is circulated throughout the entire system. An electric, thermostatic cut-



off stops the motor should the temperature rise above 190 deg. The only water connection is to the city water supply. Trippe Mfg. Co., Chicago, Ill.



The latest developments in parts, accessories, equipment and tools for the fleet shop

POSTCARD

FILL IN CARD WITH APPROPRIATE NUMBERS FOR MORE INFORMATION

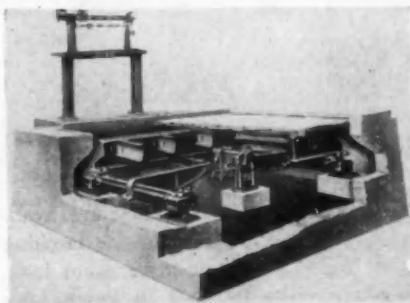


### P101. Trailer Spotter

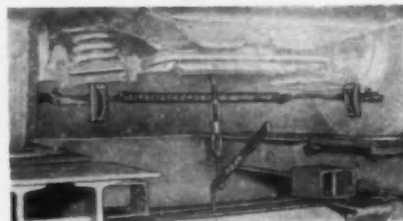
Designed for 6000 to 10,000 lb capacity fork lift trucks, a new attachment for spotting empty semi-trailers has been announced by the Clark Equipment Co., Industrial Truck Division, Battle Creek, Mich. A cross-member with a 3-in. hole in the center to engage the trailer pin is fastened to the works of the truck with a chain. In operation, the lift truck moves under the trailer until the hole is directly under the pin. The forks are lifted until the hole engages the pin and the trailer is lifted. It may be pushed or pulled to a new location.

### P102. Axle Load Scales

Coming in nine standard models, a series of truck or trailer axle load scales has been announced by Howe Scale



Co., Rutland, Vt. With a capacity range of 15, 20 and 30 tons, the scale platforms are 10 ft wide and come in 4, 6 and 8-ft lengths.



### P103. Toe Change Gage

As announced by Bear Mfg. Co., Rock Island, Ill., a new toe change indicator absorbs the parallel in and out of motion of the front wheels as the front end assembly moves up and down, thus permitting adjustment of toe angles under load and driving conditions while the vehicle is on the alignment rack.

### P104. Hydraulic Presses

Four air operated hydraulic presses—25, 40, 60 (with moveable head) and 80 tons—have been announced by American Chain & Cable Co., Inc., Manley Division, York, Pa. They are of bolted construction and have a self-locking table mechanism. The adjustable pump handle may be operated from any position. The work remains in place on the 60-ton press with the roller mounted head and pump unit moving as needed.

### P105. Spray Paint Heater

A new heater for hot-spray painting is being marketed by Spec-Flo Co., Houston, Texas, in shoulder-slung, portable or wall-mounted types. The heater has no moving parts, the paint being propelled through the heat exchanger by normal line pressure. Handling up to 10 gal per hour at an average spray temperature of 165 deg, full heat is reached by the unit in three minutes and is maintained automatically for constant flow or intermittent application.



### P106. Flo-tester

For testing gallons-per-minute flow without removing the radiator, the model J-50 flo-test machine made by Inland Mfg. Co., Omaha, Neb., can be rolled to the vehicle on the service floor. It also can be used to prove cleaning jobs and save the time ordinarily required for tank removal, rodding or inspecting.

### P107. Tire Remover



Equipped with four different combinations for removing truck and bus tires from rim or disc wheels, the model 860-C truck tire remover, announced by the Bishman Mfg. Co., Osseo, Minn., can be operated by hand or impact wrench. A hex nut on the bead driver permits the use of electric or air wrenches. It can be used as a head breaker on two-piece, semi-drop center rims. It is designed to exert 4000 lb operating shoe pressure.

(TURN TO NEXT PAGE, PLEASE)

# New Product Descriptions

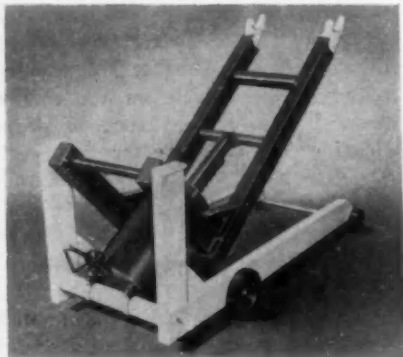
Continued from Page 75

## P108. Clinch Nuts

For blind assemblies or to furnish additional threading depth for application of bolts in thin metals, a new type of clinch nut fits into a hexagon shaped hole in the metal to which it is being applied. The head of the nut is then pressed down and flattened out, securely clinching the nut in the hexagon hole. The hexagon pilot of the nut prevents its turning when the bolt is applied or removed. They can be applied after the metal parts have been painted or enamelled and are available in standard threads or deflected locking threads. Grip Nut Co., Chicago, Ill.

## P109. One-End Lift

An air-operated, one-end vehicle lift in two models has been announced by Homestead Valve Manufacturing Co., Hypressure Jenny Division, Coraopolis, Pa. Recommended air pressure for

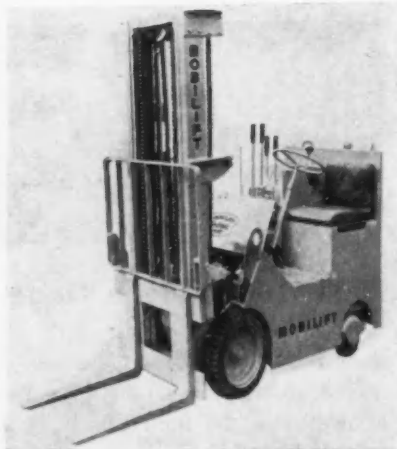


operating is 120 lb with a minimum of 80 lb required. Model 3 measures 30 x 67 x 28½ in., has a total lift height of 53 in. and 3000 lb lifting capacity, weighs 315 lb. Model 5 measures 34 x 70 x 33¼ in., has a total lift height of 50 in. and 5500 lb lifting capacity, weighs 550 lb.

## P110. Fork Lift Truck

A new 3000-lb HR sit-down type fork lift truck with independent rear wheel suspension to reduce driver fatigue and cut down load and vehicle shock, has been announced by Mobilift Corp., Portland, Ore. The suspension consists of a heavy duty spring and

an airplane type shock absorber for each rear wheel. The two-speed transmission, powered by a heavy duty, air cooled, 3-cyl engine, is controlled by push-pull operating levers located on



the right side. A grilled opening has been channeled through the counterweight for the air intake. Standard mast heights are 63, 72 and 83 in., with special heights available.

## P111. Safety Tanks

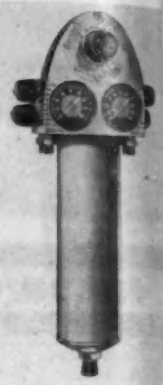
Manufactured and tested to meet proposed specifications recommended by the I.C.C., Bureau of Motor Carriers and approved by the Underwriters Laboratories, Inc., two new model fuel tanks for mounting directly below the cab have been announced by Snyder Tank Corp., Buffalo, N. Y. The support brackets are of one-piece welded construction and an integral part of the tank. The corner step mod-



els measure 18 x 20 in. and vary in length from 36 to 50 in. with capacity ranging from 44 to 64 gal. Back step models have the same dimensions with capacity ranging from 50 to 70 gal.

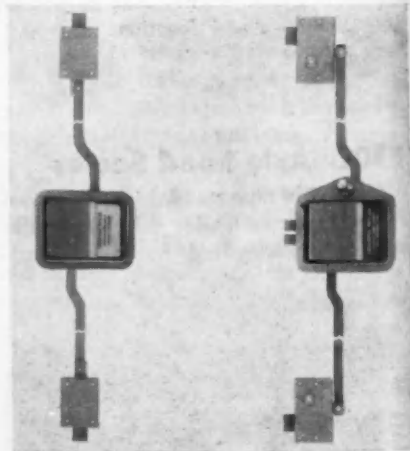
## P112. Air Transformer

Finger tip control of a new air transformer is accomplished through having the adjusting knob actuate a pilot regulator which in turn operates the diaphragm of the large regulator. It has a capacity of 100 cfm with two regulated and two unregulated air outlets. Oil and moisture collected in the condenser tube are drained by a push-pull drain knob. Corrosion resistant metals have been used in those parts of the condenser chamber which come in direct contact with the compressed air. A zinc die casting houses the regulator, two pressure gages and valves. Gaskets at the top and bottom of the condenser chamber prevent leakage. The separating mechanism is a mechanical disc-type filter. The diaphragm is made of soft rubber composition with a single fabric insert. DeVilbiss Co., Toledo, Ohio.



## P113. Door Locks

Eight new model paddle handle, recessed, door locks have been added to the line of slam action locks for utility and tank bodies by the Eberhard Mfg.

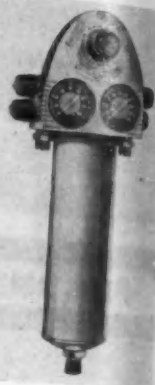


Co., Cleveland, Ohio. They are available with end latching or side latching slide bolts, in two or three point locking arrangements, and in key-locking or non-key-locking models. Locks install on right or left hand doors and can be attached by screws, bolts or spot welding.

[TURN TO PAGE 180, PLEASE]

## Transformer

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o pressure gages and  
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ngle fabric insert.  
edo, Ohio.

## Locks

paddle handle, re-  
have been added to  
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the Eberhard Mfg.

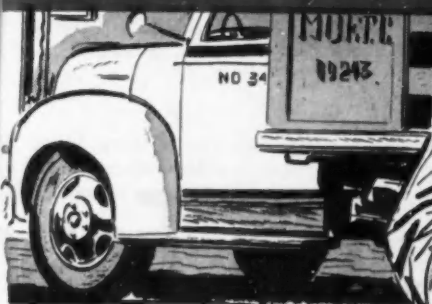


They are avail-  
or side latching  
three point lock-  
l in key-locking  
models. Locks in-  
hand doors and  
crews, bolts or

, PLEASE]

September, 1952

## If You're Getting Driver Gripes About Braking



THAT LOAD IS MIGHTY  
HEAVY SO TAKE IT  
EASY ON THIS RUN.

OK—BUT WE WOULDN'T  
HAVE TO WORRY ABOUT LOADS  
IF WE HAD BIGGER POWER  
BRAKES ON THESE TRUCKS.

If your drivers are complaining about brakes, it doesn't mean there are faults in the basic braking system of your truck. Chances are, you're hauling heavier loads and that means larger power brakes are needed to do the right kind of a stopping job.

With Bendix\* Load-Rated Hydrovac\* Power Brakes you can step up your power brakes to match all your loads—from a ½ ton to the biggest.

Load-Rating the brakes will give you faster, surer, more positive stops. Linings and drums take less beating and a reduced accident rate cuts your insurance rate. That's money in the bank. What's more, you can have the job done quickly and inexpensively.

You can get the full story on Load-Rating—what it is . . . what it does . . . how it builds profits—by writing or calling the Bendix Distributor nearest you.

\*REG. U.S. PAT. OFF.

**Bendix**  
PRODUCTS DIVISION

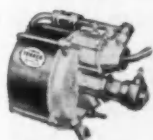
**SOUTH BEND**  
INDIANA

Export Sales: Bendix International Division, 72 Fifth Avenue, N. Y. 11, N. Y. • Canadian Sales: Bendix-Eclipse of Canada, Ltd., Windsor, Ontario, Canada

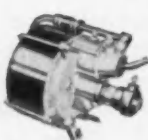


It's Time to  
**MATCH the BRAKING**  
to the **LOAD** with  
**Bendix**  
**HYDROVAC**  
THE  
**"Load Rated"**  
POWER BRAKE!

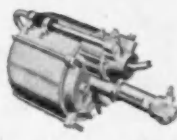
A MODEL FOR EVERY LOAD FROM ½ TON TO THE BIGGEST!



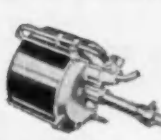
THE TONNER



THE SPECIAL



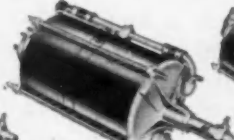
THE STANDARD



THE SUPER



THE ATLAS



THE MOGUL



THE DREADNAUGHT

COMMERCIAL CAR JOURNAL, September, 1952



REPAIR of aluminum bodies is relatively simple when recommended routines are followed. Here are suggestions for doing a better job—quickly.

The body hammers, dolly blocks and files used in steel body repairs need only two additions for aluminum body servicing, namely a rawhide hammer and wood blocks. Follow the same technique as with dents in steel panels, working around the outside edges of the dents in towards the center. Use gentle taps and increase in pressure as necessary. Use light, steel hammers and blocks for smoothing off the tapped out dent.

Mechanics who are in the habit of



Pictures on opposite page illustrate application of repair techniques to damage to the front and side panels of this aluminum delivery body

# Aluminum Body Repair is Easy

using a torch on dented steel panels already know that it expands the sheet and alters the temper. In the case of aluminum, the same principle applies. If possible, avoid the use of a torch, but if necessary, then use a large flame as lightly as possible rather than a small, intense flame.

Before using torch, clean paint off affected area. Apply heavy motor oil to area. Then use gas or acetylene torch, with large, low temperature flame, till the oiled area becomes brown—from one to three minutes. Then hammer out the dent and sand smooth or use body putty. Wash with metal prep, then with clear water and dry thoroughly. Then prime and paint.

If panel is badly dented over a considerable area, it may be cheaper to replace it than to incur the labor expense of tapping out so many dents. The high salvage value of the damaged aluminum panel also influences this.

In some cases such as dents in the skirt, it may be quicker to remove the panel and lay it on a flat wooden surface while tapping out the dents. This may hold true of front and rear quarter panels.

**Using only a few specialized tools and equipment, you can repair aluminum bodies in a minimum of time by following these basically simple procedures**

Data and photos courtesy J. B. E. Olson Corp.

Barring very severe collisions, which can badly damage any part of any vehicle, 1/8-in. thick plate used for side panels, skirt panels, and rear quarter panels minimizes the damage to these panels.

The principal point of damage is to the front quarter panels (or skins) comprising the body areas between the windshield and the front bumper guards. In a fleet operation, right and left front quarter skins can be carried in stock for use in emergencies. There is no corrosion risk in stocking aluminum replacement parts.

All rivets that join one body part, section or sub-assembly to another are clearly visible, so there is no uncertainty, no searching for them. The

only thing you have to guard against is unnecessary removal of rivets. For instance, if the skirt of the side panel has to be replaced, you remove the rivets at the bottom of the rub-rail, but not those along the top of the rub-rail.

## Remove and Replace Rivets

IN removing rivets, proceed as follows:

1. If the rivet heads are not already center marked, use a small punch and a light hammer and center punch them as an exact guide to drilling.

2. Then use an electric drill with No. 10 bit and drill the center of the rivet head only as deep as the head  
(TURN TO PAGE 136, PLEASE)



Repair techniques to minimum delivery body

# Easy

equipment,  
minimum of  
procedures

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36, PLEASE)

September, 1952



1. Rivets should be center punched and heads removed by drilling to top of rivet shaft as the first step in removing the damaged panels



2. Avoid unnecessary drilling out of rivets, as in this example where panel was removed by taking out the rivets on top the rub rail only

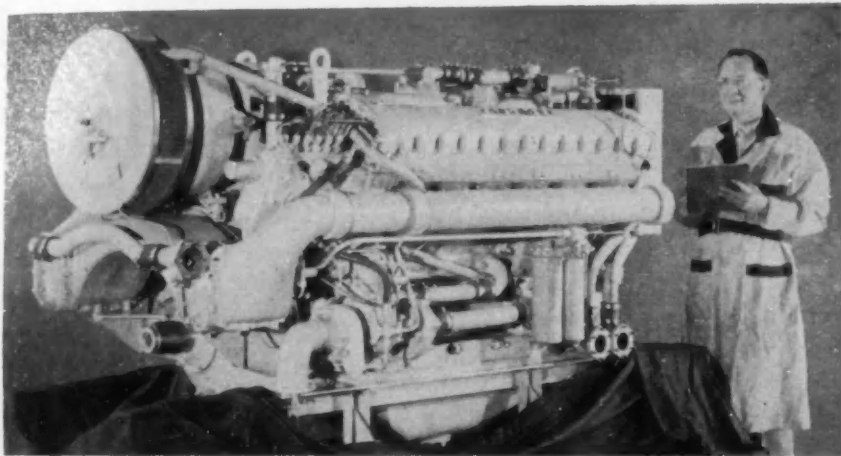
3. After heads are off, rivets may be taken out by drilling them through or by chiseling end of shaft lightly and punching them out

4. Rawhide hammer and wood block can be used for straightening most panel and other dents, using light, steel hammers for smoothing

5. After repaired or new panel is fitted in place, remove it and apply caulking where it comes in contact with other panels or parts

6. Secure replacement panels in place using brazier-head rivets, except where countersunk type is needed, and bucking them cold





*This watercooled, 4-cycle, V 12 engine features a cast steel cylinder head with cylinder block and crankcase combined in an integral aluminum casting*

## New Packard 300 HP Diesel

**Marine engine gives preview of what may be expected  
in future light, high-powered, heavy-duty truck engines**

### Condensed Specifications

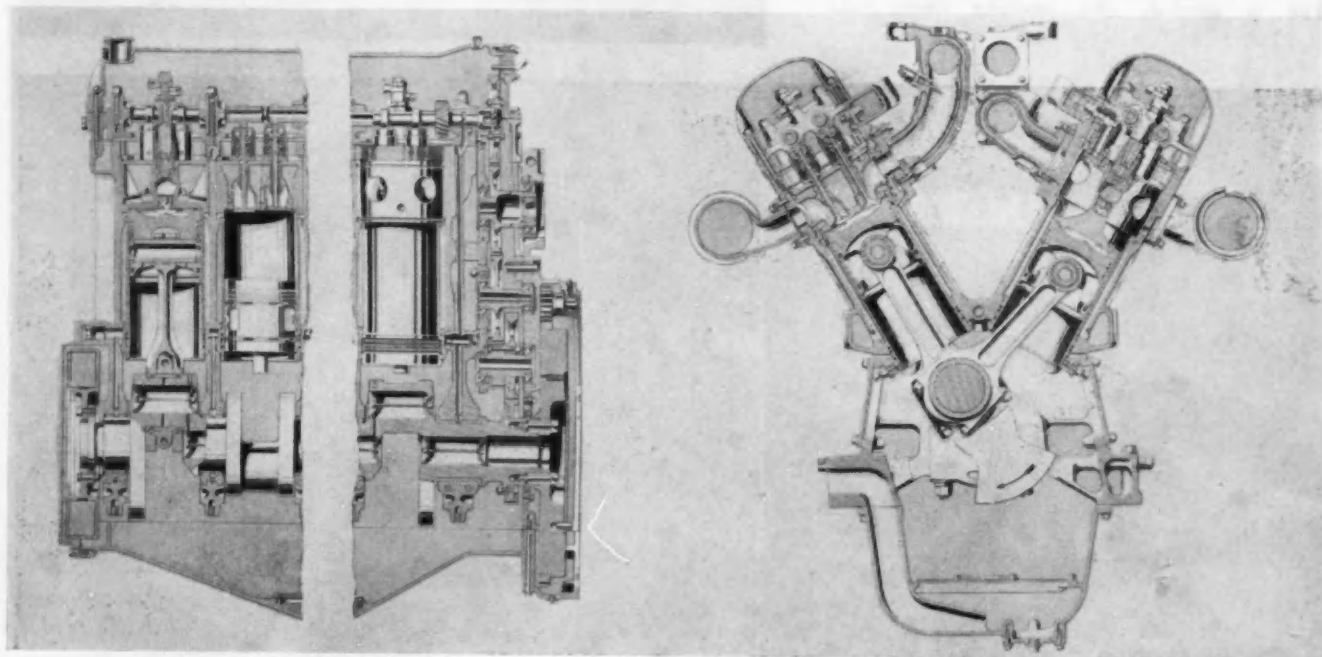
	V-12	Six (60 deg.)
Type—Four cycle, compression ignition, with precombustion chamber		
Bore (in.)	5 3/8	5 3/8
Stroke (in.)	6 1/4	6 1/4
Displacement (cu. in.)	852	1704
Compression Ratio	15 to 1	15 to 1
Rated Speed (rpm) continuous	2000	2000
Rated Bhp, continuous duty (supercharged)	300	600
Bmep, continuous rating	140 psi, supercharged	
Weight (lb)	2200	3250

**T**ANGIBLE and physical evidence of the influence of light-weight aluminum construction on the design and performance characteristics of large automotive type diesel engines is found in the family of Packard Series 142 diesel engines being built by Packard Motor Car Co. for the U. S. Navy. Watercooled and operating on the four stroke cycle, these engines will be available in 6-cyl and 60 deg V-12 models, equipped with G.E. turbochargers at the start of production. Later on Packard anticipates production of V-8 and V-16 models of the same type.

Although the Navy engines to be described here are of marine type, designed to meet Navy requirements of light weight, high speed, and high performance with maximum interchangeability of parts, it is not un-

(TURN TO PAGE 129, PLEASE)

*Cross sectional views of V 12 engine show aluminum alloy forged pistons, overhead camshaft and valve detail*





# Specifications

V-12	
Six (60 deg.)	
compression igni-	
combustion chamber	
5 3/4	5 3/4
6 1/4	6 1/4
(in.) 852	1704
15 to 1	15 to 1
2000	2000
ous	
(red) 300	600
0 psi, supercharged	
2200	3250

physical evidence  
light-weight alumi-  
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of V 12 engine  
forged pistons,  
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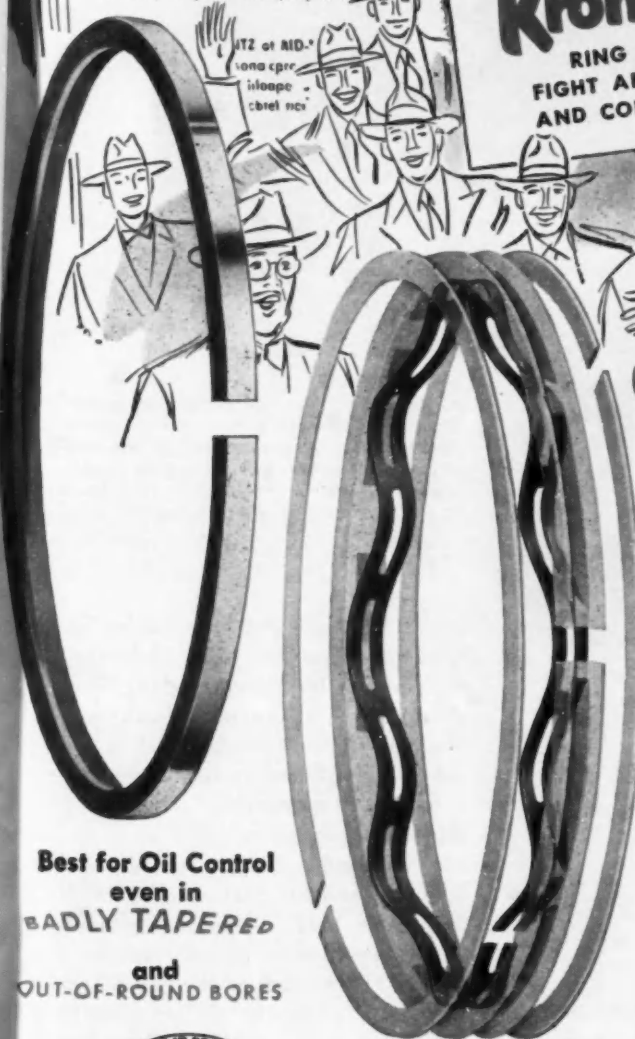
# SEALED POWER KROMEX BY A LANDSLIDE!

THE WEATHER—Heavy clouds, but  
tonight 14 high tomorrow 21, lower  
near base! Northwesterly winds.  
MOISTLY TEMPERATURES  
8 a. m. 32 11 a. m. 32 2 p. m. 32  
5 a. m. 32 11 a. m. 32 2 p. m. 32  
10 a. m. 31 1 p. m. 31 4 p. m. 31  
\*Forecast  
Sunset today, 5:02 p. m.; sunrise to-  
morrow, 5:20 a. m.

The Philadelphia Shanty trial  
to the National League was  
opposed to the game which was  
held to the National League in  
Philadelphia, 2 to 1. Score:  
Shanties 2, Nats 1.  
Philadelphia 2, Nats 1.  
Shanties 2, Nats 1.  
Shanties 2, Nats 1.

## CHROME CAN TAKE MORE PUNISHMENT

1. TOM COLEMAN, CHIEF of  
high-strength, chrome-plated steel  
iron has a chrome-plated face.  
factor—chrome is a light-light finish  
for quick seating. Chrome and Chrome  
chrome for protection in the



Best for Oil Control  
even in  
BADLY TAPERED  
and  
OUT-OF-ROUND BORES



## MD-50 STEEL OIL RING

Easy to Start and  
Lasts a Lifetime

BULLETIN  
Sally, Chicago, S. U. Jan. 22  
(11) The United States  
cal committee upon ap-  
t. Roman con-  
re a court  
alone or

Late-Model Cars and trucks operate at higher engine speeds, higher compressions, higher combustion temperatures • Chrome can take that kind of punishment • Sealed Power Kromex Ring Sets have solid chrome facing on top compression rings and on side rails of MD-50 Steel Oil Ring • All rings in Kromex Ring Sets are beveled or tapered to thread-line contact for quick seating.

SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

# Sealed Power Piston Rings

BEST IN NEW TRUCKS

BEST IN OLD TRUCKS

# The Evolution of a Bulk Grain Hauler



**Fleet-designed aluminum bodies combined with screw conveyors handle bulk feed efficiently**

THE TRIANGLE Grain Co. of Bellflower, Calif., has developed a special truck design with unloading device to speed the delivery of bulk feed to their customers, the dairymen

of California. This original design did not come about by accident. Years of experimentation and development went into this unit. Today, the company feels that it has arrived

*Above. After years of design modifications this type grain hauler with screw conveyor has been selected as best suited to Triangle's requirements. Left. Some of the original body designs tried out by this grain hauler*

at the most efficient type hauler for specialized service. The following story shows how this company went about the job of providing equipment that will improve service and at the same time up fleet profits.

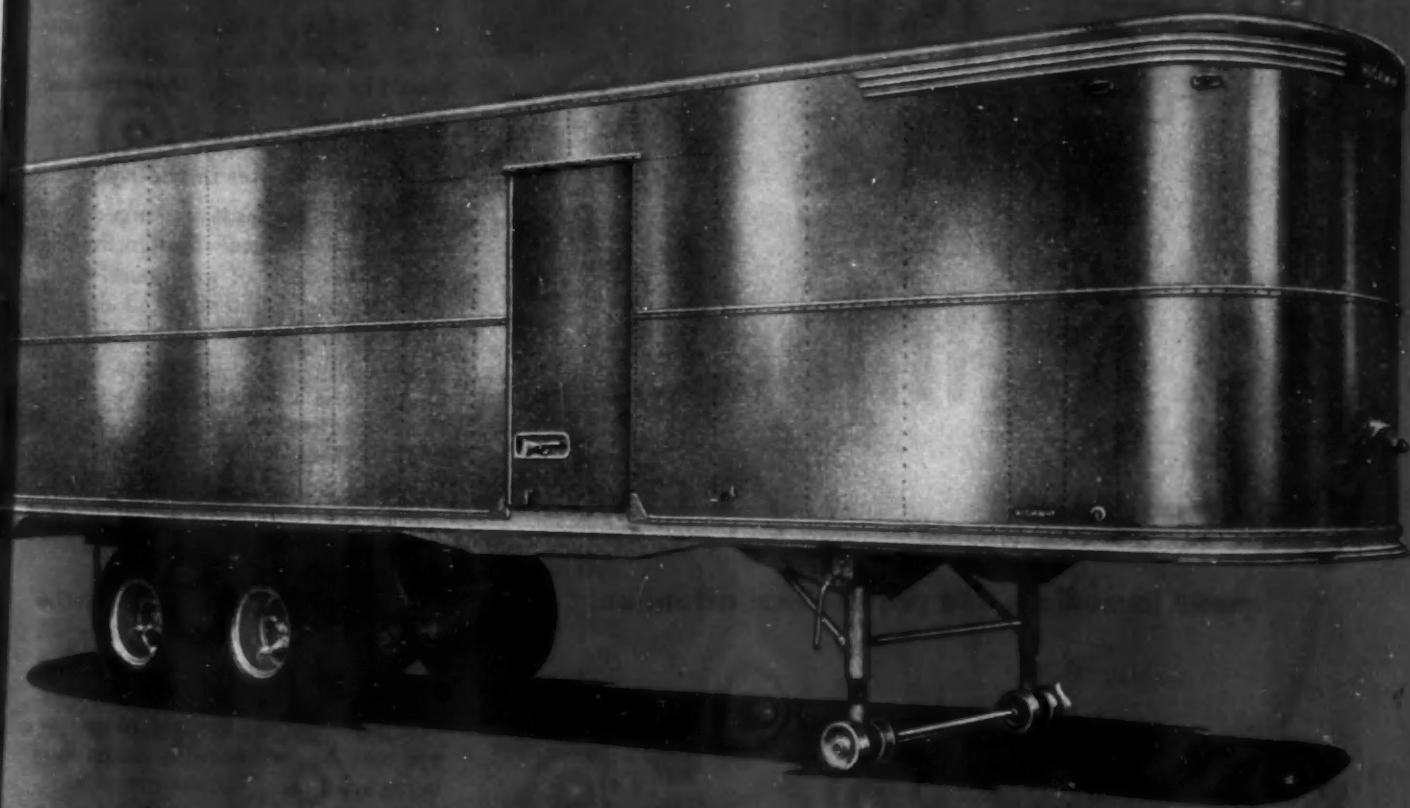
In 1944, spurred by a crippling shortage of labor which was necessary to handle sacked feed, J. Karl Williams and his partners, Leo Williams and S. J. Glaser, designed a truck specifically suited for their needs. Fifteen men worked about six months in a shop on the premises to build and perfect trucks and trailers which would carry mixed feed from Triangle's mill to their customers.

(TURN TO PAGE 146, PLEASE)



USES

# SHULER AXLES



**THERE ARE NO BETTER AXLES, AT ANY PRICE!**

Since 1915, Manufacturers of: *One-Piece* Tubular and Square Commercial Trailer Axles, Heavy-Duty Front Axles for Trucks, Busses, and Off-Highway Equipment, Low-Bed Machinery Trailer Axles, Heavy-Duty Vacuum and Air Brakes, Miscellaneous Forgings.

**SHULER AXLE COMPANY, Incorporated, LOUISVILLE, KENTUCKY**

DETROIT OFFICE  
18454 James Couzens Highway

CHICAGO OFFICE  
615 Davis St., Evanston

DALLAS OFFICE  
3402 McFarlin Blvd.

EXPORT DIVISION  
38 Pearl St., New York

WEST COAST WAREHOUSE  
1280 Forty-Fifth St., Oakland

SOUTHWEST WAREHOUSE  
301 N. W. 28th St., Fort Worth

NORTHWEST WAREHOUSE  
1238 N. W. Glisan St., Portland



# Watch Out!



## For Eye Injuries

... and if and when you need first aid, demand immediate and professional attention

**W**HILE actual treatment of an injured eye requires expert medical attention, simple remedies and first-aid are of vital importance, as the preservation of sight may depend on them. There is no time to read the bottle to discover the antidote for a chemical injury to the eye. There is no time to ask the injured man. Do what you can, and get *immediate* medical aid.

The simple remedy for chemical injuries to the eye is plenty of *clean water*. This is more important than the use of an appropriate neutralizing agent. If acids or caustics fall on the eyes, immediate washing with clean

water is essential for their action is most rapid and may cause blindness or permanent injury. However, even this first-aid treatment has its exception. Burns with quick-lime, where water will increase the injury, should be treated this way:

Particles of quick-lime or caustic lime getting into the eye should be picked off at the earliest possible moment in order to stop the harmful production of lime water.

### Have Materials Handy

A USUAL practice is to keep bottles of distilled water handy with which an injured eye can be washed

By W. Schweisheimer, M.D.

out at once. Other methods are directing a small jet of water into the eye from a small flexible hose, plunging the head into a vessel of clean water and winking the eyes rapidly, or the use of water from a bubble fountain to wash the eye clear.

No need to have a closet full of counteracting solutions for chemical burns of the eye. Modern practice in first aid says "hands off" to the common antedotes like a saturate solution of bicarbonate of soda for acid burns or a dilute solution of vinegar or ascectic acid for alkali burns. If neutralizing agents are used at all, they should be applied only under medical direction.

### Foreign Bodies in the Eyes

**P**ERHAPS the most common of eye injuries is when foreign bodies such as particles of grit, sand, dust, wood, metals, splinters, etc., lodge on the eyeball. Most foreign bodies are superficially located in the eye, as the eyelids close automatically when anything threatens the eye.

Then there is an immediate and increased flow of tears. This often washes the particle from the tender eye tissues and it may be brushed from the corner of the eye.

If this is not successful, it may be possible to lift the foreign body off the eye with a clean, dry corner of a handkerchief or a clean piece of blotting paper. In the first-aid room, the eye may be washed with a non-irritating solution.

The tears contain a disinfecting substance which will destroy a good many germs. The worst thing possible to do is to rub the irritated eye. If nothing can be done—do nothing. Make the victim comfortable, cover the injured eye with a cold compress, and take him immediately to a doctor or hospital.

No attempt should be made to rub a foreign body off the cornea. That is the transparent part of the eye through which we see. If the foreign body does not come off on blotting paper, it is probably embedded in the delicate cornea and any further

(TURN TO PAGE 135, PLEASE)

# MID-STATES FREIGHT LINES, INC., report...

tractors equipped with **Wagner Air Brake Systems**  
are nearing the 300,000 mile mark and are still performing



users are  
our biggest  
boosters

MID-STATES  
FREIGHT LINES, INC.

June 19, 1951

Wagner Electric Corp.  
2411 So. South Park Ave.  
Chicago, Illinois

Gentlemen:

In accordance with our understanding at the time we started connecting our fleet to Air Brakes and adding more power units with Wagner Air, we take this opportunity to let you know how we feel about it.

We find many of our tractors that you equipped are nearing the 300,000 mile mark and are still performing.

In checking out what few failures we have experienced, we found them largely due to improper servicing.

In view of the outstanding performance of units we have equipped with your product I feel free to highly recommend it to all air brake users.

Very truly yours,

MID-STATES FREIGHT LINES, INC.

*John W. Ferguson*

John W. Ferguson  
Manager - Highway Operations

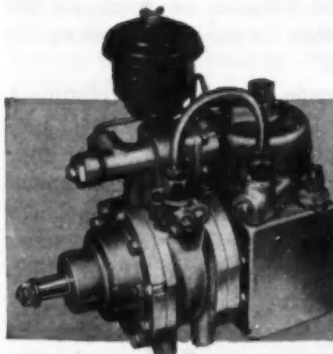
JWF/ds

GENERAL OFFICES - 9200 SOUTH PULASKI ROAD - CHICAGO 32, ILLINOIS - PHONE RELIANCE 5-8989

## Read what J. W. Ferguson has to say...

Today, in the highly competitive trucking industry, brake operating efficiency and maintenance economy are factors that must be considered if over-the-road operations are to be profitable. Wagner Air Brakes have a reputation for long trouble-free life. Only the highest quality materials are used in their manufacture. Fewer moving parts mean less friction and wear. Everything in the system from the smallest fitting to the Rotary Air Compressor is designed to give top efficiency. Because they are simple in design, Wagner Air Brakes can be easily serviced and when repairs are needed they can be made in your own shop in a minimum of time. Wagner Exchange Units and Repair Kits readily available.

For real brake safety and economy equip your fleet with Wagner Air Brakes, or when ordering new vehicles specify WAGNER. Coupon below will bring you complete information.



the  
system with  
**THE ROTARY  
AIR COMPRESSOR**

Wagner Products Serve the  
Automotive and Electrical Industries

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID  
NoRd... CoMaX BRAKE LINING... AIR BRAKES... TACHOGRAPHS  
ELECTRIC MOTORS... TRANSFORMERS... INDUSTRIAL BRAKES

Wagner Electric Corporation  
6470 PLYMOUTH AVE., ST. LOUIS 14, MO., U.S.A.  
(Branches in principal cities in U.S. and in Canada)

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_  
We operate \_\_\_\_\_ Vehicles  
(NUMBER)  
K52-2

GET YOUR COPY  
OF THE **NEW**  
**Wagner**  
**Air Brake**

DESCRIPTIVE  
CATALOG  
**NOW!**





**Announcing**



## The SAFE-DRIVING PIN Award

Program For All BARBARA ANN Driver Salesmen

**T**HE official recognition of Careful Driver-Salesmen who travel month in and month out without an accident for which they are at fault has become a widespread practice with many safety-minded organizations. In step with this movement, your Company will present to its Salesmen annually a beautiful gold pin as an award together with a Certificate as a token of recognition for an accident-free record.

**THIS Safe-Driving Pin** is in no way a reward; rather it is an award recognizing a hard job well done. When you win one, you'll find it has a removable white gold numeral, which will be raised each year as your good record continues.

ALL of you Salesmen are eligible to win this beautiful gold Safe-Driving Pin and you who were on the payroll July 1, 1950, will receive your first year Pin shortly after July 1, 1951, provided you have had no chargeable accidents by then.

SOME of you Salesmen may have had several years of accident-free driving prior to the beginning of this Safe-Driving Pin Award Plan. But, since accurate records were not kept of responsibility prior to July 1, 1950, all Salesmen begin qualifying on that date.

IF YOU have an accident in which you are partly or wholly at fault, you must start qualifying again the first of the month after the date of the accident. With a perfect record you will receive your Safe-Driving Pin with the first year numeral one year later.

A COMPLETE set of rules is posted (alongside) to which we know all of you will gladly conform.

CARRYING a Certificate (shown below) and wearing one of these gold Safe-Driving Pins is evidence of your good driving. Your winning the pin is a test of your ability, earning subsequent awards is a new challenge each year. For your own satisfaction determine to win YOUR Safe-Driving Pin and Certificate next!



**RULES FOR PIN AWARD PLAN**

**ELIGIBILITY** Those eligible to compete for these awards are Salesmen having regular routes or any other employees, such as supervisors, who spend 50% or more of their time operating company owned vehicles. (The managers will determine this.)

(Salesmen having received awards who are promoted to the position of supervisor are disqualified for further awards unless they continue to drive 50% or more of their time.)

Employees operating their own vehicles are not eligible.

**AWARDS** For the present the award will be a 100 gold pin with removable numeral and with the name of the bakery.

**REQUIREMENTS NECESSARY TO QUALIFY** In order to qualify for any of the awards to receive their first or company owned vehicle 50% or more of his time without a chargeable vehicle accident for the period specified for that particular award.

**STARTING AGAIN TO QUALIFY AFTER LOSING STANDING BECAUSE OF ACCIDENTS** - When employees are involved in an accident for which they receive a "B" or "C" responsibility charge, they lose their standing and must start again to qualify for awards (beginning with the first month certificate) the first of the month following the date of such accident, the same as if they were new employees.

**EXAMPLE** - John Doe received his one year award for his first year on July 1, 1951, and had a chargeable vehicle accident on July 15, 1951. He started again to qualify for another year on the first of August 1, 1951, and received it February 1, 1952.

**TRANSFER OF SALESMEN**

A. When Salesmen are transferred from one bakery to another, both bakeries should immediately notify the Home Office in order that the record of pin awards may be kept up to date.

Bulletin board poster tells the purpose of the award system and provides a place for official rules, printed on 8½ x 11 paper and stapled to the corner

# Safe-Driving Pin Proves Effective Award

Driver-salesmen respond to an honor  
rather than a reward. Accident ratio  
decreases as total mileage increases

By **R. C. Haven**  
Safety & Sanitation Engineer  
Langendorf United Bakeries, Inc.

**WE** wanted a safety award plan which would appeal to driver-salesmen, be equitable to all, and sufficiently easy to administer that it would not bog down in details. We wanted it to be an award for a job well done, with an award rather than a reward.

Our answer came in the form of a solid yellow gold pin with a removable white numeral representing the number of years which the wearer has driven without a chargeable accident.

To begin with, there are about a thousand of these salesmen in our 20 bakeries. Fifteen of which operate fleets. Their work takes them over all types of West Coast terrain, for our territory extends from Los Angeles to Seattle, with many depots. Any award system would have to take this into consideration.

We also discovered that during our 1949-50 fiscal year, our drivers had operated a total of 13,961,617 miles. Their accident ratio was 3.92 per 100,000 miles.

While we did not feel that this ratio was excessively high, it did preclude a major accident potential, considering the unusual size and mileage of our fleet.

An elaborate campaign, with combined bakery meetings or district-wide rallies could not be considered because of our widespread organization and because we work on the theory that "mass action defeats the purpose."

We made a series of preliminary investigations into various "package" safety plans, where the entire program is developed by the company which manufactures the prizes. These did not seem suited to our route salesmen, as we wanted a plan which would be an honor, rather than a reward. There were many types of award programs available for drivers, all of them with some merit, but our pin award plan is the one which we know will bring results.

(TURN TO PAGE 90, PLEASE)



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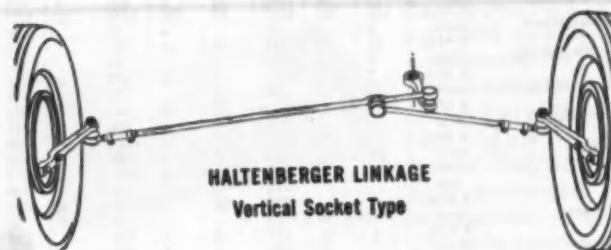
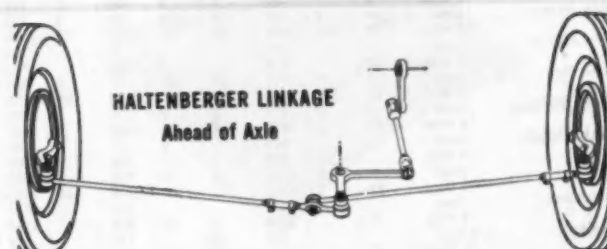
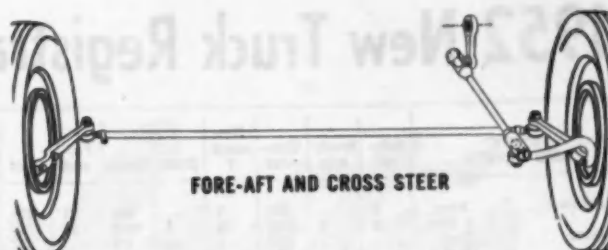
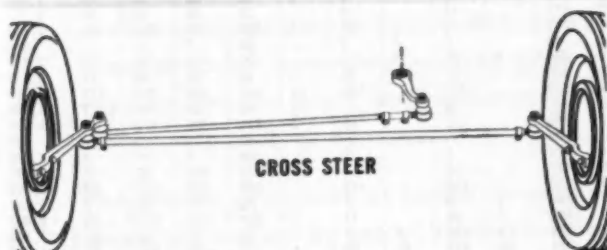
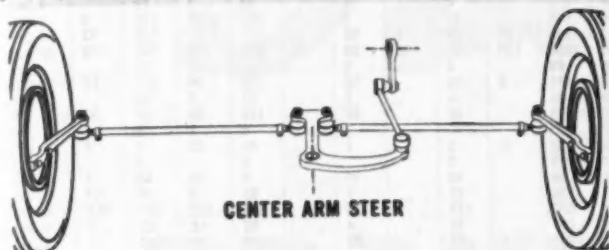
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PLEASE)

September, 1952

## Engineered Steering



**STEERING LINKAGE** must be developed to meet the requirements of many different car designs. Thompson's "steering engineers" have worked closely with car builders for over 35 years to improve steering.

With the accent on easy steering, car design advances, road speed and increased loads on suspension and linkage; steering linkage units are required to provide more strength and accuracy and greater freedom of movement at the sockets.

Improvements in modern automobiles—reduction of space due to front wheel brakes—redistribution of car weight by relocation of engines—increased movement of front wheels due to more efficient suspensions and precise location of linkage parts with relation to high point on the gear—necessitated better and far more complicated steering units.

Illustrated are 10 of the types of steering linkage found on current-model automobiles. They illustrate the variety of items produced by The Detroit Division of Thompson Products.

For consultation on these designs or other steering problems, please contact us.

**Thompson Products, Inc.**

**DETROIT DIVISION**

7881 CONANT AVENUE • DETROIT, MICHIGAN

# 1952 New Truck Registrations by Makes by States\*

STATE AND MONTH	Auto-car	Brook-way	Chevrolet	Diamond T	Dodge	Federal	Ford	FWD	GMC	International	Ken-worth	Max	Peter-bilt	Roe	Sterling	Stude-baker	White	Willlys	All Others	Total	
Alabama	June 3		942	1	196	21	364		202	100	1	21		1		53	18	23	1	1,086	
8 Mos.	9	4	3182	13	9	1018	23	1799	825	625	1	57		11		282	125	140	7	8,280	
Arizona	June 209		1	1	75		137		109	89		1		2		39	10	22	6	680	
8 Mos.			960	5	1	360	1	885	425	312	5	9	2	16		116	24	114	34	3,061	
Arkansas	June 519		1		138		315	1	208	110		4		3		53	3	12		1,367	
8 Mos.			2584	4	639		1540	2	963	518		18		5		282	26	130	5	6,686	
California	June 10		1737	15	16	822	2	1096	7	587	432	21	42	8	25	4	171	71	138	13	5,217
8 Mos.	57	13	9204	138	130	4272	7	5678	50	3290	2853	144	151	48	93	29	992	276	760	116	28,100
Colorado	June 313		5	4	72		242		109	92		5		3		34	10	61		830	
8 Mos.			1787	13	21	401	1	1266	6	559	585	6	35		16		183	29	237	17	5,133
Connecticut	June 5		234	5	107	3	129		53	65		14		7		21	7	20		679	
8 Mos.	23	23	1093	50	51	487	14	721		270	370	96		37	2	116	50	96	30	3,529	
Delaware	June 1		73	2	21		72		27	23						8	3	5		244	
8 Mos.	4	8	406	21	125	3	361		108	126		5		1		44	23	17	9	1,266	
Dist. of Col.	June 46		3	3	31	1	40		15	15		3				3				199	
8 Mos.	7		374	13	18	210	2	227		112	86	10		10		7	15	18	7	1,116	
Florida	June 601		3	4	205		382		143	139		27		1		95	9	70	14	1,083	
8 Mos.	17	3	3193	47	35	1318	2	2307		784	872	137		38		561	142	341	101	9,876	
Georgia	June 989		1	1	247		550		216	187		15		4		96	18	32	2	2,399	
8 Mos.	1	2	4261	32	19	1435	1	2740		1144	986	1		23		570	92	154	12	11,550	
Idaho	June 182		2		67		133		84	80	5	5		2		26	1	42		629	
8 Mos.			869	7	308	5	663		420	388	7	21		6	3	133	15	211	2	3,060	
Illinois	June 1		553	12	4	147		356		84	183	1		1		33	37	31	13	1,450	
8 Mos.	81	3	5876	246	77	2449	11	4276	2	1472	2783	104		66		505	309	306	104	18,670	
Indiana	June 1		652	9	281	1	379		157	245		9		3		114	42	18	8	1,824	
8 Mos.	5		2472	50	38	1419	5	2393		912	1495	74		55		615	253	139	36	10,951	
Iowa	June 471		7	2	134		317		102	225		1		3		42	10	20	2	1,336	
8 Mos.			2730	32	13	785	2	1859		586	1304	18		21		256	60	135	22	7,928	
Kansas	June 834		1		225		458		261	331		2		6		87	10	38	1	2,254	
8 Mos.			3231	19	14	866	1	2082	2	980	1294	7		16		290	68	150	10	9,010	
Kentucky	June 573		5	3	171		342		156	150		10		6		62	11	37	3	1,529	
8 Mos.	1		2789	23	8	818	5	1861	2	820	941	22		23		304	89	227	26	7,796	
Louisiana	June 432		5		128		304		129	100		14		4		47	8	14	1	1,186	
8 Mos.			2835	17	8	735		1964		817	617	33		10		333	48	131	14	7,361	
Maine	June 1		135	1	42	1	116		62	63		8		6		21	6	14		479	
8 Mos.	2	5	846	3	3	239	8	638		301	287	47		11		107	18	68	12	2,613	
Maryland	June 5		275	1	19	123		169		54	91	13		3		28	11	5	2	601	
8 Mos.	45	18	1585	10	54	649	11	1055	3	332	551	76		20		126	82	64	36	4,717	
Massachusetts	June 4		374	4	22	158	1	227		70	128	22		8		44	30	29	4	1,140	
8 Mos.	67	36	1921	52	85	857	11	1452	3	438	851	154		37		222	169	127	43	6,381	
Michigan	June 1		1092	8	13	389	5	946		243	165	18		25		60	11	40	7	3,025	
8 Mos.	22	5	5469	56	127	1998	33	5439		1369	1020	78		113		342	98	209	61	19,438	
Minnesota	June 454		8	4	229		347		121	201		4		2		50	3	24	3	1,450	
8 Mos.			2776	27	19	975	4	1912	11	599	1308	27		28		315	35	151	31	8,218	
Mississippi	June 491				119		283		181	88		6		1		46	4	9	2	1,230	
8 Mos.			2717	3	2	696		1646	2	1038	609	26		2		330	24	109	10	7,213	
Missouri	June 3		870	3	206		471		201	251		9		6		59	43	23	1	2,147	
8 Mos.	7		4541	34	61	1286		2815	2	1328	1396	1		29		360	193	133	23	12,247	
Montana	June 182		2		51		145		61	70	1	3		4		31	6	51		615	
8 Mos.			954	20	4	273	1	751		320	541	22		13		162	17	296		3,391	
Nebraska	June 458		11	4	96		312		135	216	3	7		2		45	15	82		1,354	
8 Mos.			2148	64	12	427	2	1555	8	656	982	35		21		230	79	238	10	6,478	
Nevada	June 58		2		24		18		19	11						4		10		148	
8 Mos.			259	3		111		118		116	88	7		1		30	1	45		778	
New Hampshire	June 1		81	3	30	1	65		21	25		4		3		10	1	14	2	261	
8 Mos.		4	488	4	9	182	2	341	2	140	172	39		9		56	32	93	11	1,558	
New Jersey	June 14		607	6	19	245	4	379	4	161	172	45		9		36	29	35	11	1,783	
8 Mos.	59	105	2884	48	91	1168	19	2251	13	929	1015	210		44		238	163	203	60	9,525	
New Mexico	June 1		251		61		148		60	43		8		9		23				648	
8 Mos.	12		1114	1	289		766		393	268		46		13		180	30	96	12	3,221	
New York	June 13	31	1031	27	36	451	4	605	3	233	406	67		30		80	58	64	21	3,179	
8 Mos.	97	288	5894	201	155	2705	55	3819	27	1579	2209	485		195		481	389	414	172	19,169	
North Carolina	June 3		771	2	210		387		179	141		19				89	38	44	7	1,894	
8 Mos.	19	2	3938	29	26	1446	7	2407	1	1032	985	132		16		514	211	213	41	11,021	
North Dakota	June 102		2		31		91		25	89						10		6		338	
8 Mos.			909	2	3	266		747	3	212	674	3		2		104	7	94	3	3,029	
Ohio	June 1		1442	5	13	505	3	859		246	474	13		17		113	101	83	18	3,891	
8 Mos.	21	3	5767	61	124	2328	49	4195	4	1339	2165	155		115		640	509	437	97	18,009	
Oklahoma	June 735				189		454		167	240		1				76	24	29	7	1,847	
8 Mos.	5		3274	4	16	875		2264	23	850	1106	2		35		307	149	132	30	9,067	
Oregon	June 283		12		134		1	229	1	153	144	8		10		32	15	66	35	1,154	
8 Mos.			1546	82	17	665	11	1088	4	683	721	49		112		174	75	332	67	6,707	
Pennsylvania	June 20	33	1309	13	9	604	6	659		293	427	89		15		244	95	95	8	5,316	
8 Mos.	107	201	6212	87	119	2779	32	4001	1	1569	2458	366		127		603	433	347	95	19,543	
Rhode Island	June 3		51		4	30		79		12	14					7		5		221	
8 Mos.	13	7	331	3	11	161		350		61	157	25		1		40	22	21	3	1,212	
South Carolina	June 402		2		90		212		83	80		20				35	13	11	4	958	
8 Mos.	7	1	2488	13	5	573	6	1318	2	498	762	58		2		222	64	53	35	6,107	
South Dakota	June 194		23		79		129		53	173						30		27	1	727	
8 Mos.			815	33	2	289	1	676	5	212	718	1		13		105	5	114	3	2,957	
Tennessee	June 539		3		166		307		167	126		12				64	41	20	1	1,449	
8 Mos.		21	3311	18	6	1082	4	2196	1	1048	674	89		3		244	125	142	13	9,316	
Texas	June 24		2296	8	4	556	1	1353		620	517	39		15		400	95	95	8	5,839	
8 Mos.	67		12732	91	48	3457	3	8017	1	4012	3332	17		110		1324	621	549	65	34,646	
Utah	June 173																				

States\*

White	Willis	All Others	Total
18	23	1	1,000
125	140	7	8,200
10	22	6	900
24	114	34	3,000
3	12	5	1,307
26	130	8	8,000
71	138	13	5,217
276	760	118	28,100
10	61	1	800
29	237	17	5,133
7	20	3	670
50	96	30	3,529
3	5	3	244
23	17	9	1,280
15	18	7	1,116
9	70	14	1,083
42	341	101	9,076
18	32	2	2,300
92	184	12	11,580
1	42	2	623
15	211	2	3,000
17	31	13	1,400
19	308	104	18,070
2	18	8	1,924
3	130	36	10,991
0	20	2	1,336
0	135	22	7,928
0	38	1	2,254
0	150	10	9,010
0	37	3	1,529
0	227	28	7,796
0	14	1	1,100
0	131	14	7,361
0	14	1	470
0	88	12	2,613
0	5	2	801
0	64	36	4,717
0	29	4	1,140
0	127	43	6,381
0	40	7	3,025
0	209	61	16,439
0	24	3	1,450
0	151	31	8,218
0	9	2	1,230
0	108	10	7,213
0	23	1	2,147
0	133	23	12,247
0	51	1	615
0	296	1	3,391
0	52	1	1,354
0	238	10	6,476
0	10	1	140
0	45	2	778
0	14	2	261
0	93	11	1,558
0	35	11	1,763
0	203	60	9,525
0	23	1	646
0	96	12	3,221
0	64	21	3,179
0	414	172	19,169
0	44	7	1,894
0	213	41	11,021
0	8	1	338
0	94	3	3,029
0	83	15	3,891
0	437	97	18,009
0	28	7	1,947
0	132	30	9,067
0	86	35	1,154
0	332	87	5,707
0	51	20	3,702
0	347	95	19,543
0	5	1	221
0	21	3	1,212
0	11	4	950
0	53	35	6,107
0	27	1	727
0	114	3	2,997
0	20	1	1,449
0	42	13	9,316
0	95	8	5,839
0	49	65	34,646
0	40	3	491
0	12	16	2,504
0	19	2	291
0	19	20	1,415
0	30	1	1,672
0	87	17	9,243
0	37	2	1,007
0	22	30	5,579
0	36	4	714
0	94	18	4,081
0	44	3	1,235
0	16	50	8,055
0	11	1	355
0	12	4	2,105
0	232	71,471	
0	199	87,461	
0	1802	398,932	
0	1300	515,975	

# Raybestos<sup>®</sup>

Hycoc

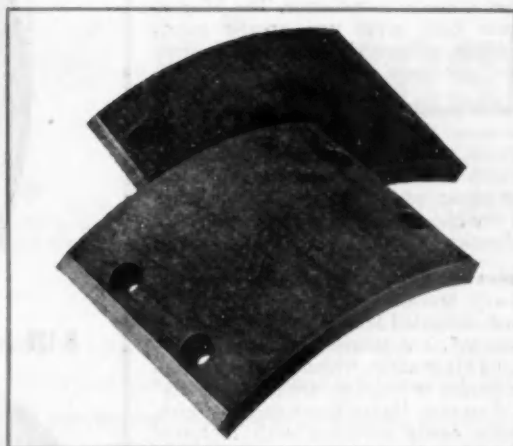
## BRAKE BLOCKS

### mean reduced maintenance costs

RAYBESTOS BRAKE BLOCKS in the right combinations reduce scoring and drum cracking. Furthermore, they last much longer and need fewer adjustments while in service. That is because they are correctly engineered for each make and model truck and bus. The performance of every combination has been convincingly demonstrated by extensive proving ground and dynamometer tests, and substantiated by thousands of fleet operators.

Additional assurance of better fleet performance can be had by use of Raybestos Ray-Lok and Ray-Metl Clutch Facings. They have no equal for smooth engagement and long life.

For specific recommendations relative to your equipment and operation, a trouble-shooting chart, and complete technical information, ask your jobber salesman to get you Raybestos Fleet Engineering Service.



Raybestos PGT Sets provide specially engineered linings for medium and light-duty trucks that don't use blocks. They are factory packaged in the right combinations to give lower cost per mile results.

50 YEARS OF SERVICE...50 YEARS OF PROGRESS...1902-1952



RAYBESTOS DIVISION of Raybestos-Manhattan, Inc., Bridgeport, Conn.  
MANUFACTURERS OF AMERICA'S BIGGEST SELLING BRAKE LINING

RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings • Radiator Hose • Fan Belts • Mechanical Rubber Products • Rubber Covered Equipment • Packings • Asbestos Textiles • Sintered Metal Products • Abrasive and Diamond Wheels • Bowling Balls



## Safe Driving Pin Proves Effective

Continued from Page 86

Thus, at the beginning of the insurance year on July 1, 1950, the to be presented one year from that date at which time a dinner would be given to honor those who qualified.

### Rules Are Posted

A PRINTED poster containing a printed copy of the rules governing the contest was prepared for use on bulletin boards, outlining the purpose

of the program. These were printed on standard-size business paper and stapled to the posters. This procedure gave a current appearance to the poster, and answered many of the questions that would naturally be asked.

The rules cover all aspects of the award system; its method of operation, qualifications, provisions for making up lost time, rights of appeal, etc.

I might mention at this point that the basic qualification for the award was that the driver be in the employ of Langendorf United Bakeries, Inc., spending 50 per cent or more of his time operating company-owned vehicles. This was specified because it is a practice in the baking business to have a number of outlying distributors who do not have regular company routes and who operate their own equipment. The company has no actual control over the drivers of such individually-owned equipment since these men only deliver the product and are not full fledged employees. For these reasons, they are not entitled to the safety award.

### Awards Made at Dinner

WE have tried to make the award at a special event, preferably a banquet, to which company, city police, and state highway officials are invited. So far, we do not have a tie-in with the driver's family nor are the wives invited to the award dinners. Photographers cover the event for local newspapers and wire services.

As an example of participation, we recently honored at dinner our 19 transport drivers. Seventeen of these drivers received one-year pins and certificates, with the remaining two receiving a six-months certificate. The transport group drove 623,656 miles during the 1951 contest year without a single chargeable accident.

Some of our explanations of the contest rules may appear trivial. However, we believe that when a new award program is started, the details of the contest, method of administration, etc., should be available to the participant as well as for executive reference. We have outlined various sub-qualifications to take care of this.

For example: "In order to qualify for any of the awards an employee must drive a company owned vehicle (TURN TO PAGE 92, PLEASE)

Fleet Operator: "Aw, be reasonable honey, be reasonable. It's business!"

Exasperated Wife: "Be reasonable, he says, be reasonable. Now, you listen to me. The night before last you came home yesterday, and last night you came home today. If you come home this evening tomorrow, I'll go straight home to mother!"

## New Arrow Magnalite

New lens design • Less weight • Better appearance

### LOW-COST CLASS "A" SIGNALS with revolutionary new Magnalume Lens

**New, more efficient prism design.** Here is a lens so well designed, so effective, that it needs no reflector. The Magnalume Lens gives you greater safety through greater visibility. It is guaranteed fade-proof and not to crack or draw.

**Makes possible narrower, lighter lamp.** Because the Magnalite needs no reflector, you get a narrow, neater lamp. Width of the double-faced Magnalite, for instance, is less than 2 1/4". Lighter in weight, the Magnalite places less vibration strain on fenders.

**Three types available.** For light and heavy trucks as well as buses. The flush-mounted Magnalite protrudes less than 1/2". The single-faced and double-faced Magnalites, which can be mounted on fender or bracket, are less than 4 1/2" in diameter. Baked black enamel finish. Bulbs easily replaced with foolproof snap ring. Magnalites also available in kits with switches.



**Model N-260** — All Magnalite Directional Signal Sets are equipped with this switch. Built-in flasher. Positive proof indicator. Unconditionally guaranteed. **ORDER NOW!**



ARROW SAFETY DEVICE COMPANY  
MOUNT HOLLY, NEW JERSEY



N-128—Double-faced Magnalite.



N-129—Flush-mounted Magnalite.

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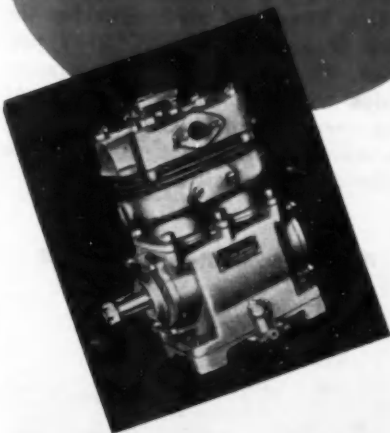
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ember, 1952



**Bendix  
Westinghouse**  
THE WORLD'S MOST TRIED  
AND TRUSTED  
**AIR BRAKES**



**THE BENDIX-WESTINGHOUSE COMPRESSOR**—heart of the air brake system—performance proven over more miles on more installations than any other compressor available!

**first**  
*choice for the* **biggest**  
*...the logical choice for you*



Why not take a braking tip from the men who operate the rugged off-the-road giants. They'll tell you it takes **stopping power and performance-plus** to provide perfect braking control for nearly 70 tons of solid rock and steel, defying gravity up grade and down under the very toughest of operating conditions. Ask them what brakes they choose for this tremendous task and time after time you'll get the same answer—Bendix-Westinghouse. That's because these mighty brakes, built by the industry's most experienced manufacturer, pay off with the **safest, surest, most dependable braking action** and longest service life in the business. And these are factors that mean **reliable, economical performance** on any hauling job—from the roughest to the most routine. That's why, no matter what type trucks you operate, you'll be sure to get the most in **safety, dependability and savings** by specifying Bendix-Westinghouse—the world's most tried and trusted air brakes.

**BENDIX-WESTINGHOUSE  
AUTOMOTIVE AIR BRAKE COMPANY**  
ELYRIA, OHIO      BERKELEY, CALIF.



## Safe Driving Pin

Continued from Page 90

50 per cent or more of his time without a chargeable vehicle accident. When employees are involved in a vehicle accident for which they are responsible, they lose their standing and must start again to qualify for awards, beginning with the first of the month following the date of such accident, the same as if they were new employees." A safety committee meets

monthly to determine the responsibility.

"At the end of the second year, the pins of all salesmen still in good standing were recalled and the numeral '1' replaced with a numeral '2'. Annually thereafter numerals will be replaced with the next higher one. When a salesman has received a pin, has had a chargeable accident and has started again from scratch, he will receive no more numerals until he is entitled to the next one higher than the one he already possesses."

Provision has also been made for employees to make up lost time who

have been absent because of illness, accidents, transfer to other departments or temporary layoff due to no fault of their own. These provisions are generally based on the year award for which the salesman is qualifying.

### Effectiveness Seems Certain

EVIDENCE of the effectiveness of the pin award is still somewhat incomplete, because the competitive spirit of maintaining high numerals has not yet had the chance to be felt. Since we are about to complete the current year, the decrease in our accident ratio has provided substantial reason why we believe that the plan will be a success.

In 1951 there were 678 of our 950 driver-salesmen qualified to receive the honor, representing well over 70 per cent of our driver employees. At present time 551 or over 81 per cent of the 678 are still in the running for their 2-year numeral. The optimism with which we view the award is based on the accident ratio picture for the 1951 contest year. We had 3.92 accidents per 100,000 miles for the previous year and with the contest in force, decreased this to 3.68. The decrease of .24 accident on a 100,000 mile basis may seem slight, but it represented a 6 per cent reduction, while the total mileage increased about a million miles over the previous year.

Our company feels that having its own pin lends a personal touch you don't get from a package deal. The blank space at the bottom of our pin can be used to insert a jewel.

Top management in the Langendorf United Bakeries, Inc., is solidly behind the pin award and has been sold on the idea of a well-organized safety program. This has been from the humanitarian and economic standpoints. At our several award dinners, various corporation officers have been present to make the presentations.

END

Please Resume Reading Page 88

### 20,000 Trailers



Twenty thousand of these 1/4-ton trailers will be supplied the U. S. Army Ordnance Dept. under a new \$6,000,000 government contract recently awarded Strick Co., Philadelphia, Pa. During the last war, Strick originated seven new truck trailer designs that were later accepted and standardized by the Army.

## THOMSON the most complete line in the business!



● The right part for every car or truck—that's old stuff in some parts lines. But it's new in thermostats . . . and Thomson has it! The Thomson line is the most complete in the business . . . 65 first-quality numbers . . . coverage of practically every car, truck, bus, tractor and engine on the road today. And that includes the big trucks and the big engines. When you buy stats, buy from the jobber who has them all—your Thomson Jobber!

STANDARD-THOMSON CORPORATION • DAYTON 2, OHIO



Thomson  
Thermostats



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September, 1952

handle **ALL** pulling jobs  
swiftly...easily...profitably...with

# \* **Snap-on** **INTERCHANGEABLE** **PULLER TOOLS**

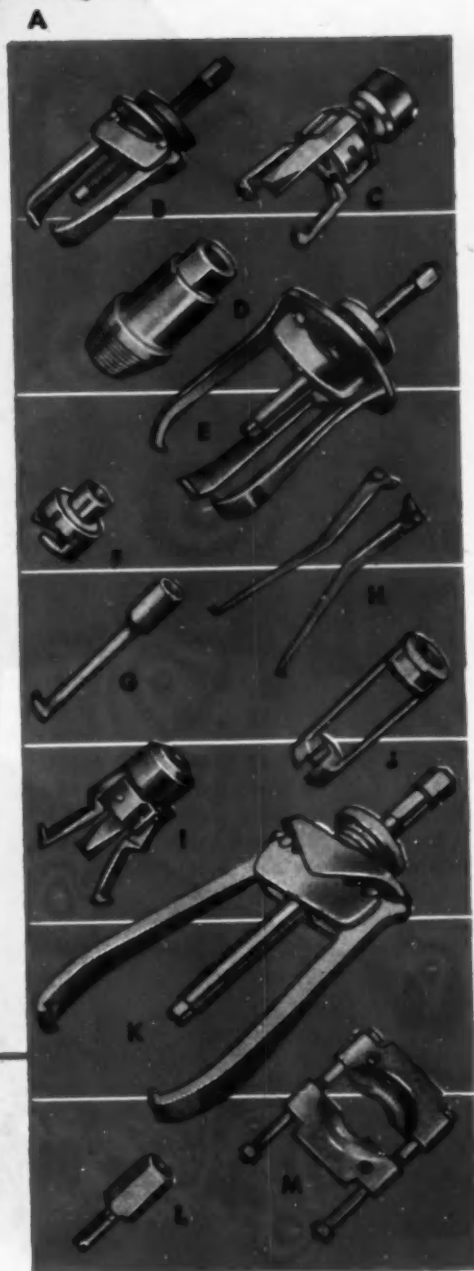
ON EVERY COUNT you're money ahead with Snap-on Pullers. *Money ahead* in first cost, because fewer Snap-on units cover a far wider range of pulling operations. *Money ahead* in time saved per job...right down the line Snap-on gives you the fastest, most efficient and adaptable pullers yet designed. *Money ahead* in durability...because they're Snap-ons, finely manufactured to traditional Snap-on standards of rugged strength and long life. Let your Snap-on Man show you how the *right* combination of puller units can do *more* work for you...more easily...at lowest cost! Let him demonstrate these typical Snap-on puller units:

- A—2-jaw medium slide-hammer puller—8 1/2" jaw capacity.
  - B—2-jaw basic gear puller—4 1/2" jaw capacity.
  - C—Axle puller head—fits all sizes.
  - D—Chrysler grease retainer puller.
  - E—3-jaw medium basic puller, 8 1/2" jaw capacity.
  - F—Valve puller head.
  - G—Bearing puller tool.
  - H—Long jaws—fits yokes of (A) and (B).
  - I—Chevy bearing race remover unit.
  - J—Brake cable remover.
  - K—Large gear puller—14" jaw capacity.
  - L—Chevy truck axle puller unit.
  - M—Bearing separators, for pulling double bearings, closely fit gears, etc.
- Note: Units (D), (F), (G), (I), (J), and (L) are used with slide hammer and shaft of (A).



**SNAP-ON TOOLS**  
**CORPORATION**

8026-1 28th Avenue  
Kenosha, Wisconsin  
\*Snap-on is the trademark of  
Snap-on Tools Corporation



COMMERCIAL CAR JOURNAL, September, 1952

# The Push-Button Lubrication System That Save Time... Eliminate "B"



*Treats the Engine  
Not the Oil*

PREVENTS "Engine Ulcers" . . . .

© AP Parts Corp., 1952

# ation Twins inate "Break-ins"

During engine re-assembly, use modern, time-saving lubricating methods. Simply spray all parts with the dgf 123 Pres-A-Luber for dry pre-lubrication and with the Miracle Power Pres-A-Luber for wet lubrication. Both contain colloidal synthetic graphite in suspension . . . protect parts during "break-ins" . . . prevent costly comebacks. Try the twin "Pres-A-Lubers"—you'll find they're a must for your work bench.

**THE AP PARTS CORPORATION**  
1137 AP Building • TOLEDO 1, OHIO  
Manufacturers of: MUFFLERS • PIPES • MIRACLE POWER • dgf 123



rs" . . . CAUSED BY DRY STARTING

## Autocar uses Le Roi V-8 Engine

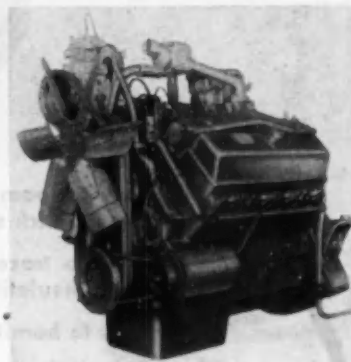
A NEW tractor utilizing a V-8 engine is being produced by the Autocar Co., Ardmore, Pa. The model C-85-T is manufactured in 142 and 159 in. wheelbase lengths.



The engine, built to Autocar specifications by the Le Roi Co., Milwaukee, Wis., develops 207 hp at 3000 rpm. Weighing only 1250 lb, it has a lower weight-horsepower ratio—six lb per hp—than any comparable truck or bus engine.

It has a high compression ratio of 6.7 to 1, but because of its compact 43-in. length, comparatively short crankshaft and short 4½-in. stroke with minimum radius rotating parts and carefully designed structural strength the engine runs evenly without vibration.

Autocar's announcement marks one of the first heavy-duty high-way tractors using a V-8 engine, although Hall-Scott has been supplying them for some time for West Coast equipment and Ford has available its big V-8's for its larger tonnage truck models. Chrysler, DeSoto and Dodge V-8's could probably be adopted for use in the heavier Dodge trucks.



The Autocar V-8 has been road tested over the Pennsylvania and New Jersey turnpikes for almost a year, and the company claims fast acceleration and power reserve comparable to V-8 automobile engine performance.

Other features of the Autocar V-8 include crankcase and cylinder block as an integral casting with removable cylinder liners. Offsetting the short stroke, the comparatively large 4½-in. bore provides extra area for the stellite-faced valves in the head.

The tractor itself has an all-steel cab with curved windshield, elevated instrument panel, adjustable driver's seat and room for three men.

It is expected that future development of the light weight, small size V-8 engines will make possible a reduced hood length and height, permitting design changes that will allow a shifting of a larger percentage of the payload to the front axle.



## Utility Fleet Streamlines PM

Continued from Page 55

We have been able to save some time and facilitate spotting vehicles on lifts used by the mechanics which are flush lifts and not drive-ons as we have on the lubrication rack. We have placed depressions or the rear wheels to indicate proper position and in order to line up the front end laterally, the driver places his left front

wheel on a yellow line. Spotting is accomplished regularly in less than 5 minutes.

Lifts are time savers when used for tire work. We provide impact wrenches for lugs and we get the job done better and faster while at the same time relieving the worker of some of the physical labor involved. We have tried to

**Only CRESCENT WIRY JOE  
#98 Plastic Primary Wire  
gives you  
these 9  
advantages!**



1. Easier to loom because of smaller outside diameter and slick surface.
2. Easier to trace because of permanent color of plastic insulation.
3. Easier to handle because of greater flexibility.
4. Can be wiped clean with cloth.
5. Impervious to oil, grease, Diesel fumes.
6. 5 to 7 times more resistant to abrasion and acids.
7. Will not support flame.
8. In handy dispensing box.
9. Ideal for trailer cable hook-up.



THE CRESCENT COMPANY, INC., Pawtucket, Rhode Island

**Remember!** Neglected wires cause fires! Check the wire on every truck—replace old or worn primary wire with genuine Crescent Wiry Joe No. 98 Plastic Primary Wire.

help the mechanics and other workers become pilots or engineers of power devices which do the physical labor. Good mechanics like this system and we have a small labor turnover.

### Winter Maintenance

**M**OST public utility fleets are low mileage fleets and ours is no exception. But what we lack in mileage may often be made up in punishment. Our vehicles go—in any weather—under any conditions—when others can't.

Our first winter in our new location was unusually severe with more than average number of days of snow and ice. Our fleet is parked mostly in the open and these iced and snow-covered vehicles must be made ready to go each morning. To clean off ice and snow quickly we devised a spray system through which drivers drove their vehicles in a minute and a half and came out clean and de-iced.

This spray system was built in our own shop and consists of a large number of spray nozzles in 2-in. pipe arranged to spray sides and top of each vehicle. When not in use as in the summer time, these sprays fold back against the wash rack wall out of the way. When in use they fold out at right angles to the driveway and the vehicle drives between them.

Hot water is used for de-icing. Through a heat exchanger hooked up with our steam heating supply, our water is heated and controlled by electric thermostat at 140 deg. We found that this is the highest temperature we could use without damaging glass, paint or decals. The regular line pressure of less than 40 lb was insufficient so we hooked up a booster pump which provides a pressure of 80 lb. We found that this combination of heat and pressure would clean ice and snow from a vehicle almost instantly. The time and trouble saved by this method is apparent when you think about scraping ice from windshields by hand.

### Oil Change Program

**A**NOTHER long pull development that has saved us time and money is our engine oil program. Latest reports on heavy-duty oil indicate that wear on rings and cylinder walls can be reduced from 35 to 47 per cent when heavy-duty oil is used consistently over a period. This bears out our own experience. Many of our vehicles are operated 80,000 miles without re-ringing. We have no sludge problem and our oil consumption rate is so small as to be of little interest to oil companies as a competitive bit of business.

Some mileages go as high as 10,000 before it is time to change the oil on a

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September, 1952



# Turn to Hastings for complete coverage in HEAVY-DUTY CHROME SETS



Hastings 2C sets are recommended for re-ring, re-sleeve and re-bore. Each Set is Motor Engineered to the specific engine, and each incorporates the famous Steel-Vent Chrome oil ring. Companion rings include both regular and chrome types, depending upon the operating characteristics of the engine. In Hastings 2C, you have one set which handles every cylinder condition.

For those who prefer chrome top compression rings and cast iron oil rings, Hastings offers the CT sets—for re-bore and re-sleeve installations. In CT sets the top compression rings are chrome faced. Other rings are cast iron type. Oil rings are either plain cast iron or inner-spring type, depending upon operating characteristics of the engine for which the set is Motor Engineered.



You'll find the exact set you need, in the Hastings chrome line.

You'll find smooth, hard, cylinder-saving chrome where you need it . . . with the right combination of Hastings companion rings . . . Motor Engineered to your make and model, to your engine conditions and operating needs.

For more than six years, Hastings Chrome Sets have delivered an entirely new standard of piston ring service. In every heavy-duty application, they've changed the concept of piston ring life and cylinder wear.

Use Hastings Chrome on your next ring job. See how much you can save.

HASTINGS MANUFACTURING COMPANY, HASTINGS, MICHIGAN • HASTINGS LTD., TORONTO  
Piston Rings, Spark Plugs, Oil Filters, Casite, Drott



Hastings gives you chrome top rings or oil rings or oil-compression rings in Motor Engineered combinations for every heavy-duty job.

## HASTINGS STEEL-VENT PISTON RINGS

CHROME-FACED FOR HEAVY-DUTY SERVICE

## Utility Fleet

Continued from Page 96

twice-a-year basis. We have a few units which run over 100,000 miles a year and the oil is changed on these at 90-day intervals.

In developing our oil change program oil was subjected to constant laboratory tests for a period of more than one year. During this period hot oil samples were analyzed in the labora-

tory of a leading oil company at the rate of new hot oil samples every two weeks. As a result of these tests it was discovered that oil made certain patterns depending on the amount in suspension. This is the blotter test which I am sure you know all about. The checker puts the oil from his oil stick on a blotter when in doubt and compares it to see if filter needs changing or take more of the matter in suspension out.

The period of changing oil at twice each year was set by the result of the

analysis of these hot oil samples and this routine is not changed—the color sample indicates the need for a filter change. We go much on the theory that the oil itself does not wear out but merely becomes loaded up with dirt, of much of its suspended matter. Our gas mileage figure is 11.2 for all types of vehicles and our oil consumption is way down.

END

Please Resume Reading Page 56

## Shop-Made Machine

Continued from Page 57

### Air Handy for Tires

WHILE compressed air is used in large quantities and is handily piped to every place where it may be conveniently used, there still is a need for time-saving portable air that can be taken beyond the lines and on the large parking lots.

For instance, one of its key uses is in the event a bus develops a low tire while parked. Since they parked close together it would be more difficult and time-consuming to change the tire on the spot than it would be to use the portable air tank and give it enough air to run into the tire department where everything is handy. This procedure eliminates taking a chance of damaging a tire by running it low even for a short distance.

Another important use is to furnish air for cleaning off overhead valve covers on engines when they are to be removed for valve lash setting. No valve cover is to be removed before being cleaned, according to a shop order. This order was issued when it became apparent that since these covers gather grease and grime in use, that if they are removed without cleaning, some of it is bound to get inside.

Since the service procedure is to set valve tappets almost anywhere a bus is conveniently parked rather than take the time and expense to move to any special section, the portable air tank comes in handy for cleaning covers and engine compartments for these routine service operations.

END

Please Resume Reading Page 58

### The Royal Slip

Terrific Teddy, our shop trouble shooter, says that he became engaged to one of those fancy hula dancers who played here with the Hawaiian Stage Show last year—but she wiggled out of it.

DID  
YOU  
KNOW  
:  
?

#### DID YOU KNOW?

There is enough ice in Antarctica today to cover the entire globe with a layer one hundred and twenty feet thick.



**MOLD-BLOK**  
BRAKE LINING

Did you know that years of research and experience in the heavy-duty braking field have gone into Mold-Blok? It is available in a friction range necessary to give you the best possible service. Specify Mold-Blok Brake Blocks for all jobs—old and new—it is a thoroughly dependable product.



**MOLDED MATERIALS DIVISION**

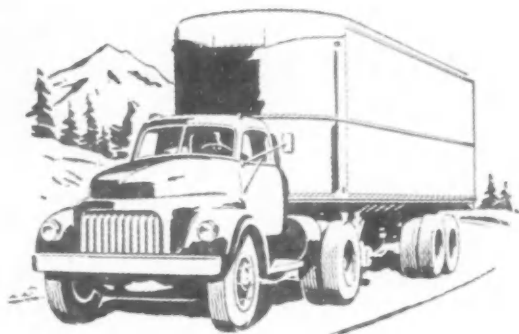
OF

**CARLISLE CORPORATION**

RIDGWAY, PA.



# Eaton 2-Speeds cut hauling costs



*Axle Division*  
**EATON MANUFACTURING COMPANY**  
CLEVELAND, OHIO



Today, America's roads are crowded with twice the traffic they were designed to carry. Help end the national traffic jam by speaking up for more and better roads.

**E**aton 2-Speed Axles provide a gear ratio for every load and road situation; permit engines to run in the most economical speed range; reduce stress and wear on engines and power transmitting parts. This means lower cost right down the line: through reduced operating and maintenance costs, through faster trips, through longer truck life. And Eaton 2-Speed Axle trucks are worth more on the trade-in.

Let your truck dealer explain how Eaton's exclusive planetary gearing, forced-flow lubricating system, and positive shift control keep trucks on the job without expensive axle repairs.

## EATON

### *2-Speed Truck*

## AXLES

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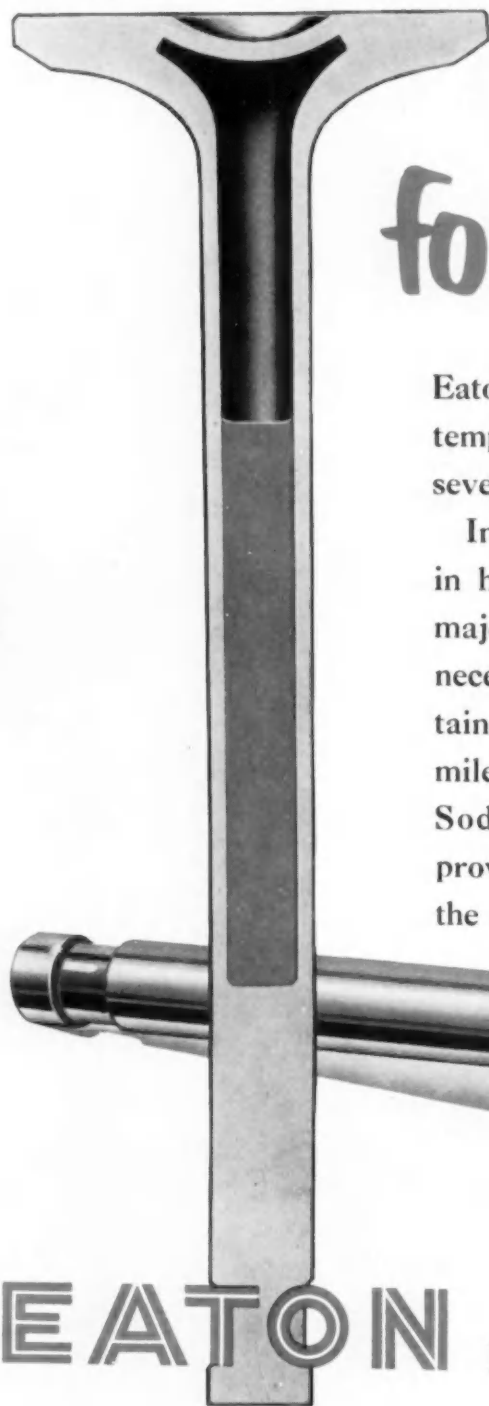
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Slip

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September, 1952

# Eaton SODIUM COOLED VALVES save money for Truck Owners



Eaton Sodium Cooled Valves operate at considerably lower temperatures than do conventional valves and, therefore, last several times longer.

In general, maintenance of Eaton Sodium Cooled Valves in heavy duty truck engines is scheduled only at time of major engine overhaul. No in-between trips to the shop are necessary for servicing the valves. Engine output is maintained at high levels over long mileages. In many millions of miles of heavy-duty operation, Eaton Sodium Cooled truck valves have proved their ability to keep trucks on the road and out of the shop.

## EATON

MANUFACTURING COMPANY  
CLEVELAND, OHIO

VALVE DIVISION: 9771 FRENCH ROAD • DETROIT 13, MICHIGAN



**PRODUCTS:** Sodium Cooled, Poppet, and Free Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Rotor Pumps • Motor Truck Axles • Permanent Mold Gray Iron Castings • Heater-Defroster Units • Snap Rings • Spring Washers • Cold Drawn Steel • Stampings • Leaf and Coil Springs • Dynamatic Drives, Brakes, Dynamometers

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# IHC Improves Blue Diamond Engine

INTERNATIONAL Harvester Co. has placed in production an improved version of its Super Blue Diamond 269 engine which features six major changes designed for more efficient and economical performance: i.e., new cylinder head, increased compression ratio, new plated aluminum alloy pistons, new head gasket, changed ignition timing and recalibrated carburetor.

Compression ratio of the engine has been increased to 6.5 to 1 from the old ratio of 6.3 to 1. Intake ports and cooling passages in the new cylinder head have been changed so that the area under the intake valves is of a "triangle" rather than "T" shape, forming streamlined passages into the cylinders for the fuel-air mixture. Water passages around the outside of the port areas also have been streamlined for better cooling.

The new plated aluminum alloy pistons are now ground to a J-8 cam for freedom from possible scoring throughout the life of the engine. A thin tin plating is added to the pistons for quicker break-in. The head gasket is a new thinner piece for better seal and better heat transfer between the cylinder head and block. Ignition timing has been changed to meet the higher compression ratio used, and the carburetor has been recalibrated to meet the improved performance requirements of the BD-269 engine.

International has also made available conversion kits for installing its new overhead valve Silver Diamond 220 and 240 engines in International K and KB line trucks. The kits contain the parts necessary to complete and install the regular stripped Silver Diamond engine, with the exception of generator and coil, which may be switched from the old engine.

## Fire Truck Chassis

International has introduced a new, heavy-duty fire truck chassis, featuring a choice of engines developing from 266 to 318 hp. Available in several wheelbases, the model L-306 has a gross vehicle weight rating of 30,000 lb.

The new truck is the largest in the company's series of fire truck chassis.

It is engineered and equipped to mount water pumps capable of delivering 1000 to 1250 gal per min.

Seven IHC models for mounting fire apparatus now include, in addition to the L-306, the medium-duty L-166, L-176, L-186 and L-1856 models, and the heavy-duty L-196 and L-206 models. The overall line ranges in GVW from 16,000 to 30,000 lb. Wheelbases offered vary from 130 to 175 in. or longer depending on equipment to be mounted.

Engines powering these trucks range from the Silver Diamond 240, which develops a maximum of 108 bhp at 3600 rpm for the L-166, to the Hall- (TURN TO PAGE 102, PLEASE)



## GUMOUT "ON-THE-ENGINE" CARBURETOR CLEANING Makes Trucks Run Better

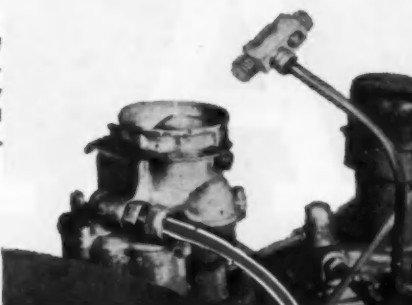
You can do it in  
20 minutes

Gets your trucks back on the run faster! GUMOUT eliminates hard starting, stalling, bucking, and rough idling caused by dirty carburetors. An entirely new method that cuts maintenance costs and downtime.

Order GUMOUT from your Jobber or send coupon today!



GUMOUT DIVISION  
Pennsylvania Refining Company  
Cleveland 4, Ohio  
Butler, Penna. Edgewater, N. J.  
Refiners of Penn Drake Petroleum Products  
Since 1880



GUMOUT DIVISION, Pennsylvania Refining Co.  
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Please send:  
... Cases of GUMOUT (24 Pints) at \$7.60 per case  
... Five-gallon pails of GUMOUT at \$5.20 per gallon  
... GUMOUTERS at \$2.95 each  
... Additional information

Company.....  
Address.....  
City..... Zone..... State.....  
Favorite Jobber.....



## International . . .

Continued from Page 101

Scott 1091 which provides 318 bhp at 2200 rpm for the L-306. Other engines available in particular models include the Blue Diamond 269, the Red Diamond 372, 406 and 450 and Hall-Scott 855 and 935.



A wide selection of transmission types and gear ratios are offered on the new models to meet fire departments' particular needs. The L-166 can be fitted with transmissions of four or five speed, with either overdrive or direct-in-fifth. The L-176, L-186, L-1856, L-196 and L-206 models are available equipped with five-speed transmissions.



### Adds Six C-O-E Models

SIX new C-O-E models with choice of diesel, gasoline, or LPG have been introduced by International Harvester Co. These include LCD-405, LFCD-405, and LTCD diesels and LC-405, LFC-405, LTC-405 gas or LP gas. These models are built at Emeryville, specialized to meet rigid overall length requirements in all states. One feature of the new jobs is a high degree of interchangeability of units and parts with corresponding conventional models.

Outstanding feature of the new COE'S is that all models can be used with

standard 35-ft semi-trailer equipment anywhere even with sleeper cab. They can be used even in Pennsylvania and Massachusetts despite restriction of semi-trailers to 33 ft. Bumper to back of cab dimension is only 72 in., making these jobs suitable for tractor-trailer service where there is premium on overall length.

Axle options include—single reduction, double-reduction, and two-speed axles on LC and LCD models. LTC and LTCD models offer the same choice of single axle drive units in combination with dead axles in either pushing or trailing arrangements.



# AM

## TRAILER



✱ ALUMINUM-MAGNESIUM

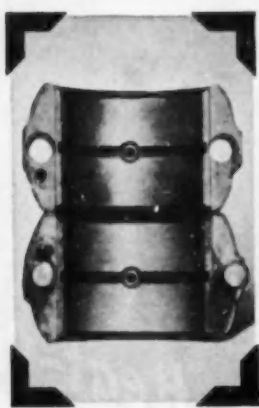
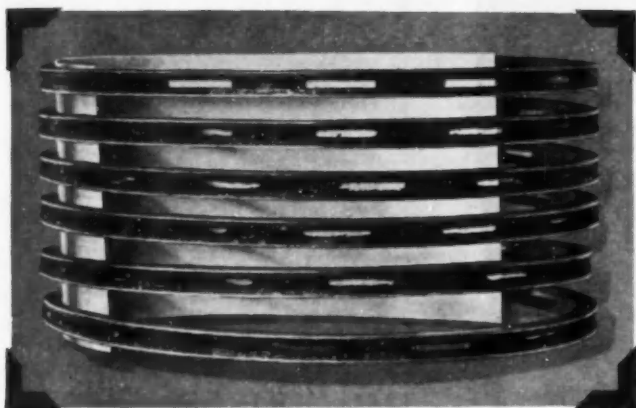
IT IS DURABLE IT IS LIGHT IT CARRIES NO  
GREAT PREMIUM PRICE IT INCREASES THE PAY LOAD

KENTUCKY MANUFACTURING COMPANY R. C. Tway Company, Incorporated, Owner  
2601 SOUTH THIRD STREET, LOUISVILLE 8, KENTUCKY

# STANDARD ENGINEER'S REPORT

DATA	RPM DeLo Oils
LUBRICANT	D-8 Caterpillar
UNIT	Earthmoving contract
SERVICE	work
CONDITIONS	Heavy loads— dirt, dust
FIRM	T.H. Walsh-Argo Engineering Company Los Angeles

## Engine parts "like new" after 7721 hours!

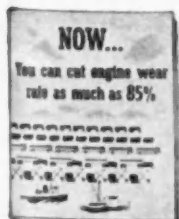


THIS SET OF OIL RINGS and the piston and con-rod bearing at right—all from a D-8 Caterpillar using RPM DELO Heavy Duty Lubricating Oil—appear just as they did when removed after 7721 hours of earthmoving

work. There were no broken or stuck rings; the oil-return holes were open; all parts were free from deposits. The crankshaft was not more than 0.001 inch out of round at any point and was reinstalled.



THE D-8 "CAT" above is the one from which the parts came. It is one of 11 large diesel tractors operated by the T. H. Walsh-Argo Engineering Co., Los Angeles. By using RPM DELO Oils, the company regularly gets 5000 or more hours between overhauls.

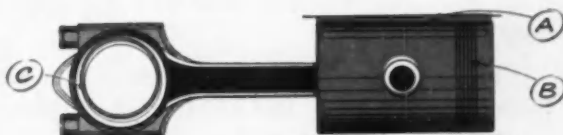


FREE BOOKLET on the RPM DELO Oils gives you complete information on how to meet any heavy-duty engine operating condition with one of these oils. Write or ask for it today.



TRADEMARK "RPM DELO" REG. U.S. PAT. OFF.

### How RPM DELO Oils reduce wear, corrosion, oxidation in all Heavy-Duty Engines



- A. Contain special additives that provide metal-adhesion qualities...protect parts whether hot or cold, running or idle.
- B. Anti-oxidant resists deterioration of oil and formation of lacquer...prevents ring-sticking. Detergent keeps parts clean...helps prevent piston scuffing.
- C. Special compounds stop corrosion of any bearing metal and foaming in crankcase.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

STANDARD OIL COMPANY OF CALIFORNIA  
225 Bush Street • San Francisco 20, California

THE CALIFORNIA COMPANY  
P. O. Box 780 • Denver 1, Colorado

STANDARD OIL COMPANY OF TEXAS  
P. O. Box 862 • El Paso, Texas

# NEW GUN IRON BRAKE DRUMS



**ELIMINATE  
Heat-Checking**

**REDUCE  
Squeal**

**at LOWER COST-PER-MILE, too**

Hunt-Spiller Brake Drums are now being made of a new Gun Iron alloy which eliminates heat-checking in all but the most severe cases and at the same time equals or surpasses the wear-life of previous Gun Iron drums. In addition, in most instances, these drums take the squeal out of heavy-duty braking.

Hunt-Spiller pioneered the first cast brake drum over twenty years ago . . . a Gun Iron drum that wore so well it shortly was adopted and preferred by the bus and truck industry. This *new* material, an alloy of Gun Iron, is the result of years of research in the Hunt-Spiller laboratories to increase wear-life and particularly overcome the serious problem of heat-checking. On-the-road performance records prove the success of that research.

Hunt-Spiller drums are made to original equipment specifications for most busses and trucks. They are accurately machined for easy, kink-free installation; fully guaranteed. For complete details send for new descriptive bulletin which includes some outstanding results reported by users.



**HUNT • SPILLER**

MANUFACTURING CORPORATION

AUTOMOTIVE DIVISION

399 DORCHESTER AVENUE • SOUTH BOSTON 27, MASS.

## Ontario Opens Road to U.S. Trucks

U. S. truck operators can now move "in bond" truck traffic over southern Ontario highways between Buffalo, N. Y. and Detroit, Mich., saving about 100 miles on each trip and considerable time as compared to the route through the heavy industrial area along southern Lake Erie.

Regulations, issued recently by the Ontario Minister of Highways, call for payment of a \$7 fee for each trip in each direction, but U. S. licensed trucks will not be required to have Ontario PCV or motor vehicle licenses.

Applicants will apply for a special license, to be known as "Class L," to the province's municipal board located in Toronto. Other requirements are:

1. Authority from the Canadian federal government to operate "in bond" through Canada.
2. Authority from the ICC to operate within the areas adjoining the Canadian points of entry and exit.
3. Proof that public liability and property damage insurance policies are valid in Ontario for \$5,000 and \$10,000 public liability and \$1,000 property damage.

4. A statement as to the number of daily one-way trips to be operated and the points of entry and exit to be used.

Operators will apply to the Ontario Department of Highways for a supply of single trip permits, paid for in advance by check or money in Canadian funds. These will be distributed to the Collectors of Customs at the points of entry according to the operator's instructions. Border officials will not have the authority to sell the permits.

Through issuing these permits, the provincial government plans to control the volume of traffic over the highways. The Minister of Highways has discretion to refuse or revoke the licenses if the traffic shows signs of becoming too heavy. Trucks cannot operate on holidays, afternoons on Saturdays or on Sundays over the routes.

Truck operators terminating trips in the Buffalo zone will not have to pay the New York state ton-mile tax. One firm estimates a saving of \$50 per vehicle on each trip in direct costs alone despite the \$7 "toll."

Permitted during World War II, the use of the southern Canadian route has been refused since that time. Last April the Canadian federal government passed a bill giving the provincial Highway Minister authority to permit, control and regulate such traffic.



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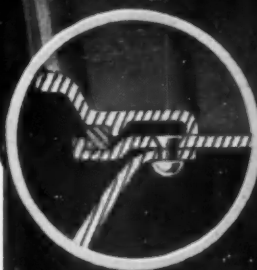
# KELSEY-HAYES

Advanced Design

## 3 pc. Truck Wheel

With the  
**EXCLUSIVE**   
**Safe** LOCKING DEVICE

Hailed by truck manufacturers and  
tire servicing men as the safest ever devised!  
As tire is inflated the retaining ring locks the  
assembly even tighter. Also assures greatest  
convenience in tire mounting, demounting,  
and tube insertion!



Available in all popular sizes for  
leading makes of trucks . . . to  
increase tire mileage 20% to 50%!



ASSURES PROVEN PRODUCTS AT  
**KELSEY-HAYES WHEEL COMPANY**

DETROIT 32, MICHIGAN

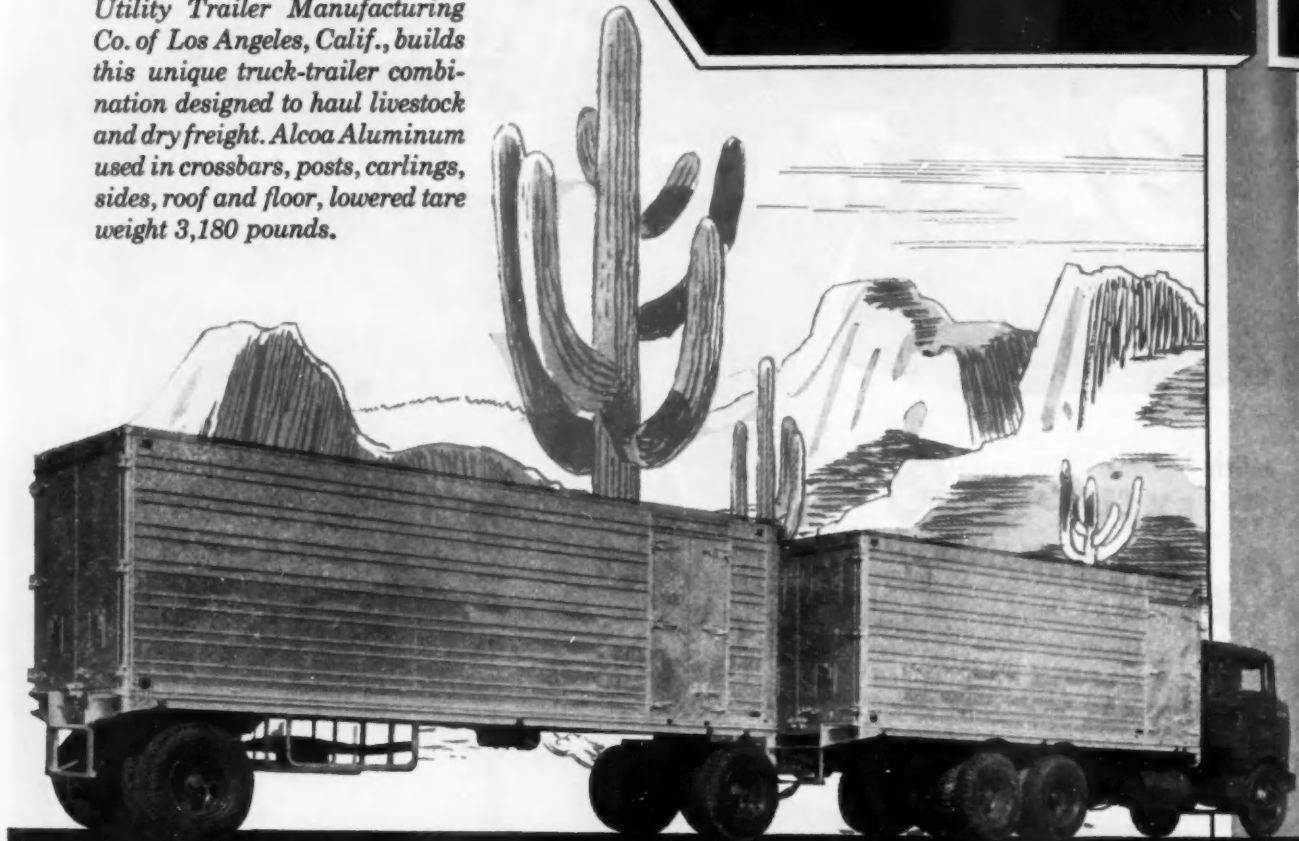


PRODUCTS: Wheels—Hub and Drum Assemblies—Brakes—Vacuum Brake Power Units—for Passenger Cars, Trucks,  
Buses—Electric Brakes for House Trailers and Light Commercial Trailers—Wheels, Hubs, Axles, Parts for Farm Implements.  
PLANTS: Kelsey-Hayes Plants in Michigan (4); McKeesport, Pa.; Los Angeles, Calif.; Davenport, Iowa; Windsor, Ontario, Canada.

**From coast**

**to**

*Utility Trailer Manufacturing Co. of Los Angeles, Calif., builds this unique truck-trailer combination designed to haul livestock and dry freight. Alcoa Aluminum used in crossbars, posts, carlings, sides, roof and floor, lowered tare weight 3,180 pounds.*



# ALUMINUM PA



## ALCOA

*First in Aluminum*  
**THE METAL THAT LASTS**



"SEE IT NOW" with Edward R. Murrow — CBS-TV every Sunday . . . brings the world to your armchair. Consult your newspaper for local time and channel.

On U. S. 1. . . or U. S. 101. . . or on any road in between . . . trucks and trailers built of Alcoa Aluminum pay off! Here are some of the reasons why it pays to equip your fleet with Alcoa Aluminum units:

**EXTRA PAYLOAD**—lightweight aluminum construction reduces vehicle tare weight by thousands of pounds without sacrifice of capacity or strength.

**LONGER SERVICE**—thicker, stiffer sections possible in aluminum construction have greater strength, more ton-miles of profitable life.

st

to coast

Kent Transport Co. of Philadelphia, Pa. operates a fleet of "Payliners" built of Alcoa Aluminum by Gramm Trailer Corporation. An all-purpose van, this 28-foot "Payliner" weighs only 7,600 pounds . . . has an amazing extra payload . . . and plenty of strength to carry it.



# M PAYS OFF!

Or on any  
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aluminum  
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sacrifice of

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of profit-

**LESS MAINTENANCE**—aluminum's corrosion resistance and excellent paint-holding properties materially reduce the cost of maintenance.

**EASIER REPAIRS**—aluminum's greater modulus of elasticity and ability to absorb impact loads localize damage. Thus repairs are easier, faster, less costly.

Your equipment manufacturer or your Alcoa sales engineer will be glad to show you how trucks and trailers constructed of Alcoa Aluminum can increase your revenue and cut your operating expenses.

## Write for PAYLOAD PROOF

Free 36-page booklet contains actual case histories and statistics on a variety of highway equipment constructed of aluminum. Send for your copy, today! Write: ALUMINUM COMPANY OF AMERICA, 1876-J Gulf Building, Pittsburgh 19, Pennsylvania.



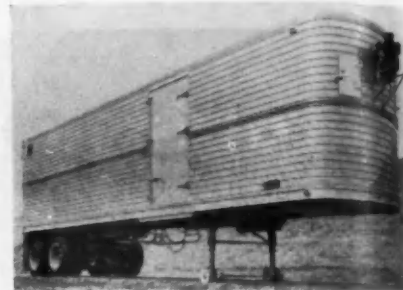


# Spencer Aluminum Trailer

TANDEM assemblies, axles and king pin structure are the only steel components of a new aluminum trailer recently announced by Spencer-Safford Loadcraft, Inc. Designed and produced in cooperation with Reynolds Metals

Co., Louisville, Ky., the trailer features aluminum alloy supporting sills, side uprights, corner posts and rub rails, with a pure aluminum outside "skin."

Rear doors open flush to side, and the door frames are equipped with



slide-in Koroseal strips for dust-proof and air-tight protection. Fluted, 2-in., tongue and groove flooring decreases weight but retains the strength and rigidity needed for long wear.

The lightweight construction is said to allow an increased payload of from 1500 to 3000 lb on this "Five-Star" trailer to be produced at the Augusta, Kan., plant.

The especially designed tandem axles are built around the Spencer "true beam" trailer axle with an 18,000 lb capacity each, and include Loadcraft brakes and Reyco model 1100 universal suspension. Aluminum, steel demountable rim or Budd wheels are optional.

With a non-insulated inside height of 89¼ in., it stands 12 ft 3 in. on 10:00 x 20 tires. It comes in 30, 32 and 34-ft lengths excluding bumper. A 41½ in. wide side door is optional.

# NIEHOFF



## Coils to Fit Every Truck and Car

### Weather-Warranted and Rugged!

Mr. Fleet Owner, you can be sure, with Niehoff coils hot-sparking your truck motors. Weatherized construction *seals out* rain and storm and climate troubles. Quick and easy to install in all types of trucks, cars, buses.

Precision-engineered, tough-built, Niehoff ignition parts stand the gaff of short and long-haul fleet requirements. Every part warranted for 90 days or 4000 miles.

See your jobber; or write us.

**C. E. NIEHOFF & CO.**

4925 LAWRENCE AVE. • CHICAGO 30, ILLINOIS

#### BRANCHES

Boston 34, Mass., 254 Brighton Ave.  
Los Angeles 15, Cal., 1330 W. Olympic Blvd.  
New York 19, N.Y., 250 W. 54th St.

**C. E. NIEHOFF & CO.**  
*30th Anniversary Year*

#### Easy Bulb Snatching



First of their kind on the Pacific Coast, a fleet of seven International LM-152 trucks with 9½-ft Metro bodies and 32-in. frame extensions mounting a 32-ft aerial ladder are being used to service more than 97,000 street lights in Greater Los Angeles. Access to the extension ladder is through the partitionless body and a 26-in. door to the rear platform, eliminating the need to leave the vehicle to raise the ladder. Gear for raising and revolving the ladder is mounted on the left side of the platform. The body top is equipped with a 26-in. working area platform in addition to the ladder storage space.

COMMERCIAL CAR JOURNAL, September, 1952

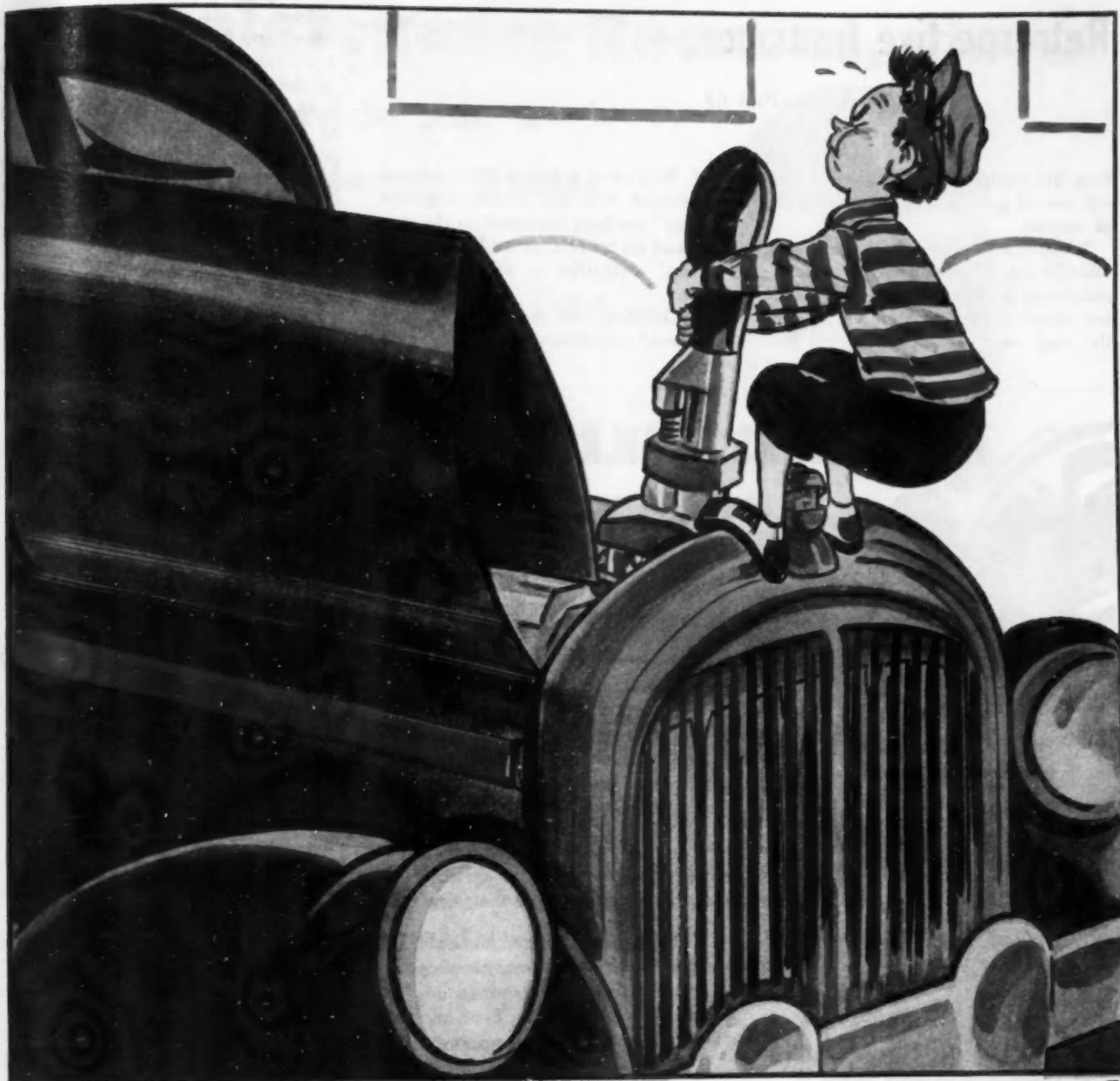
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storage space.

eptember, 1952



*Don't send a boy to do a man's job!*

It takes a man to do a man's work!

Same way with motor oil. When it comes to lubricating the engine of a hard-working truck or bus, you need a real "man-sized" motor oil. So get Phillips 66 Heavy Duty Motor Oil!

To begin with, Phillips uses a scientific blend of fine-quality, tough crudes. These are refined by continuous "cold-fractionation", which preserves the basic lubricating "goodness" of the oil... no quality

deterioration from overheating.

Then Phillips adds specially selected detergents which disperse engine sludge and carbon. Other additives reduce corrosion, foaming and acid action. You can rely on Phillips 66 Heavy Duty Motor Oil to do an efficient, all-around job of lubrication and engine protection... under severe conditions! Use it wherever you need a "man-sized" oil. Phillips Petroleum Company, Bartlesville, Oklahoma.



*Oil for the Engines of Commerce*

**PHILLIPS 66 HEAVY DUTY MOTOR OIL**

COMMERCIAL CAR JOURNAL, September, 1952

## Retrospective Insurance

Continued from Page 69

uses his equipment, he may find himself out of service while the unit is out of service.

7. All road units are checked periodically on a dynamometer and the maintenance department is responsible for tractor trailer hookups on all over the road movements.

8. With prior approval of the drivers, the legend, "the line of safe, courteous drivers" has been inscribed on the rear doors of all trailers, as evidence of the drivers' obligation to other highway users.

9. Colliding with the rear of a vehicle ahead produces an automatic sus-

pension of one week. Apart from this there is no fixed program of discipline. Each case is decided individually and on the facts.

10. Employees are regularly informed of such items as revenue, expenses, profit, freight claims, accident frequency, and accident expense. Much of this information is mailed to their homes so that the driver's family can share in the information.

11. Each year there is an employee recognition banquet held at each of the company's principal locations.

12. There are extensive security measures such as a retirement plan (on a profit sharing basis), \$5,000 free group life insurance, disability insurance, hospitalization, surgical and medical expense for employees and dependents, financial assistance through non-interest bearing loans, and an upgrading program. All of these, the company feels, help to promote sound employee relations and along with it the principal by-product of safe operation.

### Three Phases of Interest

THE second fleet operator on the program was K. R. Sechrist, secretary-manager of Coastal Tank Lines, one of the nation's largest petroleum haulers. Mr. Sechrist emphasized the theme that a company's safety record, and along with it its insurance and other costs, were almost directly proportional to the amount of interest shown in the safety program by top management. Said Mr. Sechrist:

"Traditionally, the truck operator seems to go through three phases of interest in the importance of insurance and the safety position of his company. First, a company starts in the trucking business enthusiastically, and operates with a profit motive. But it soon learns the hard fact that it is dealing with the human element. . . . The operator realizes he has a risk but he is content with standard regular insurance premiums.

"Second, such a carrier becomes more intensely interested as he learns that fellow operators are enjoying a lower insurance premium and he embarks

(TURN TO PAGE 114, PLEASE)

## ARE DRIVERS "RAILROADING" YOUR VEHICLES?

### Handy Governors Will Stop It

Any driver is likely to be less than meticulous in his care of a vehicle he doesn't own. Many feel no compunction about "railroading" your vehicles. Drivers do most of their work away from supervision . . . abuses are hard to correct.

Handy Governor will stop "railroading" — stop practices which run up costs and wear out vehicles before their time.

The savings in tire, fuel, and lubricant costs, engine repairs, brake maintenance and general maintenance are spectacular. Reduced accident and insurance costs are equally important.

Let us show you some figures on savings — and tell you how little it costs to get them.



## KING-SEELEY CORPORATION

ANN ARBOR, MICHIGAN

PLANTS AT  
ANN ARBOR, SCIO,  
YPSILANTI

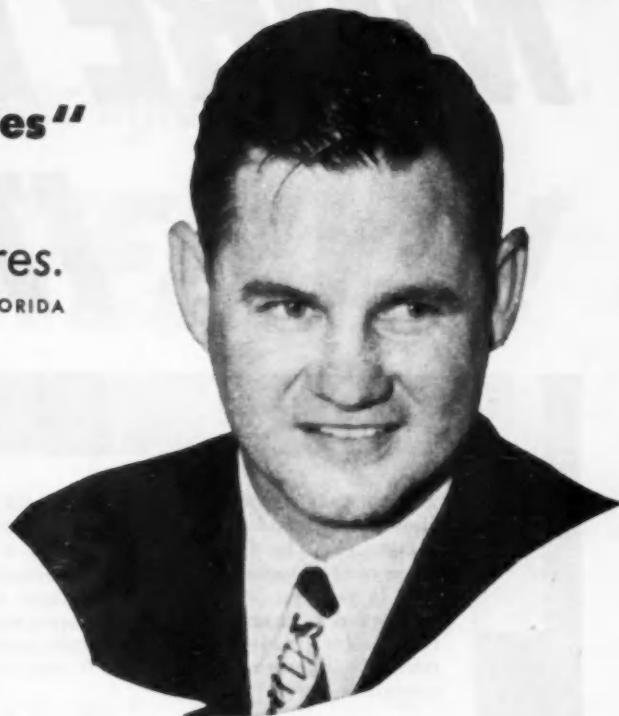




# "For Maintenance Reasons, alone we can't afford to use anything but Lindsay Bodies"

*says* **James A. Ryder, Pres.**

RYDER TRUCK RENTAL SYSTEM, MIAMI, FLORIDA



"Appearance and functional design were the deciding factors when we bought our first Lindsay bodies in 1948. However, our operating records soon showed that for maintenance reasons, alone, we can't afford to use anything but Lindsay bodies on our enclosed trucks," says James A. Ryder, progressive young president of Ryder Truck Rental System, Miami, Florida. "This construction really cuts body maintenance to a minimum and the savings—both in repair cost and lay-up time—are a mighty important consideration in a low margin operation such as ours."

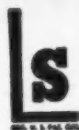
Ryder Truck Rental System, a member of the National Truck Leasing System, operates a total of 1400 units in Florida, Georgia, North Carolina and South Carolina. The company has its Lindsay Structure bodies built to the individual fleet re-

quirements of its customers by Miller Trailers, Inc., Bradenton, Florida.

Here are other "bonus" advantages you get with the LS patented method of construction—light weight, strength, safety and long life. Ask your nearby Authorized LS Body Manufacturer today for information on a handsome Lindsay Structure body built to your individual needs. If you do not have his name and address, write



## LINDSAY



## STRUCTURE

Lindsay Structure, Inc.  
3000 West Dempster St., Skokie, Illinois

U. S. Patents 2017629, 2263510, 2263511  
U. S. and Foreign Patents and Patents Pending

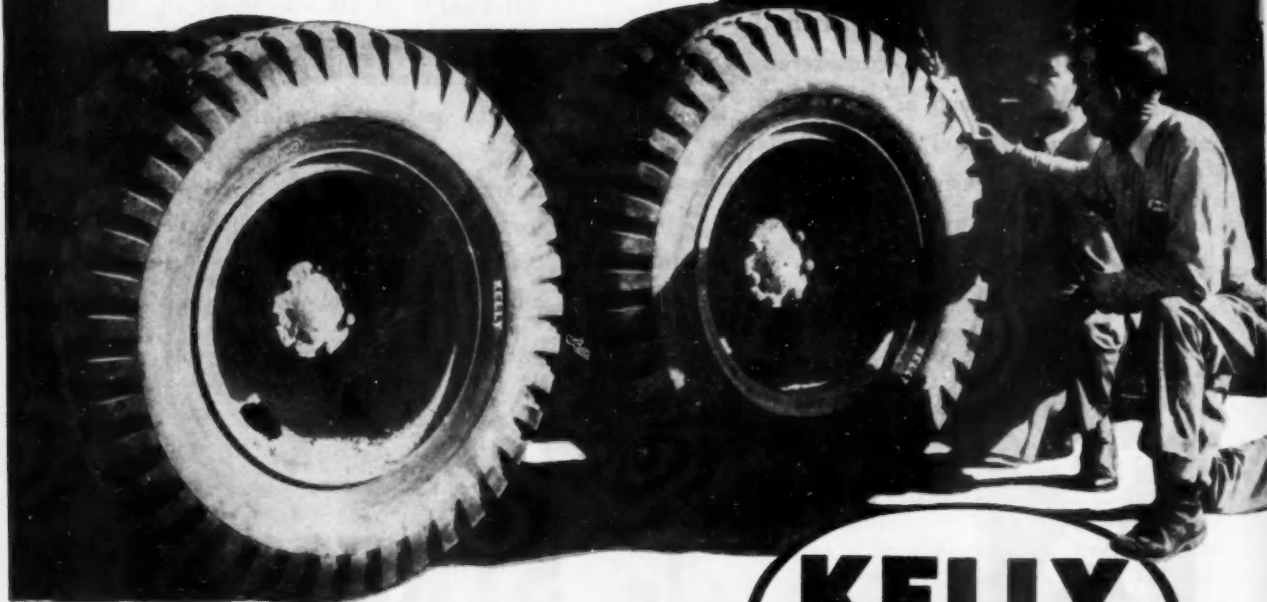
Ryder Truck Leasing System had these LS Bodies especially designed to fit the operations of Swed Distributing Co., Tampa, Fla.



# **MORE PROOF** from the **IT PAYS TO**

**75,000 MILES OF THE ROUGHEST GOING!** "The picture shows the second set of Kelly Dual Tracs to go on this truck. The first set just 'retired' after three years of the roughest going in gravel pits, river beds, etc. It put out 75,000 of the toughest miles ever demanded of a tire. This performance reassures us that Kellys give that low cost-per-mile, necessary for profitable operation. Dual Tracs fit into our type of operation 100%."

Joaquin Fernandez  
Hartman Concrete Materials Co., Bakersfield, Calif.



**Y**OU CAN'T BEAT evidence like this—and our files are loaded with it—records from truckmen all over the country, based on every kind of trucking operation!

These records prove over and over again that tough, long-wearing Kellys give more miles for the money . . . better carcasses for recaps . . . less "down time" . . . greater safety!

You can expect Kellys to do more on *your* trucks, too, because Kellys are quality-built in every detail, *job-designed* by a company that has researched the secrets of better tire building for 58 years.

Why not put these money-saving tires to work for you *now*? Your own cost-per-mile records will show you what a wise choice you made.

THE KELLY-SPRINGFIELD TIRE COMPANY, CUMBERLAND, MARYLAND



*there's a tough Kelly  
for every trucking job*

from  
TO

the truckmen's own cost-per-mile records!

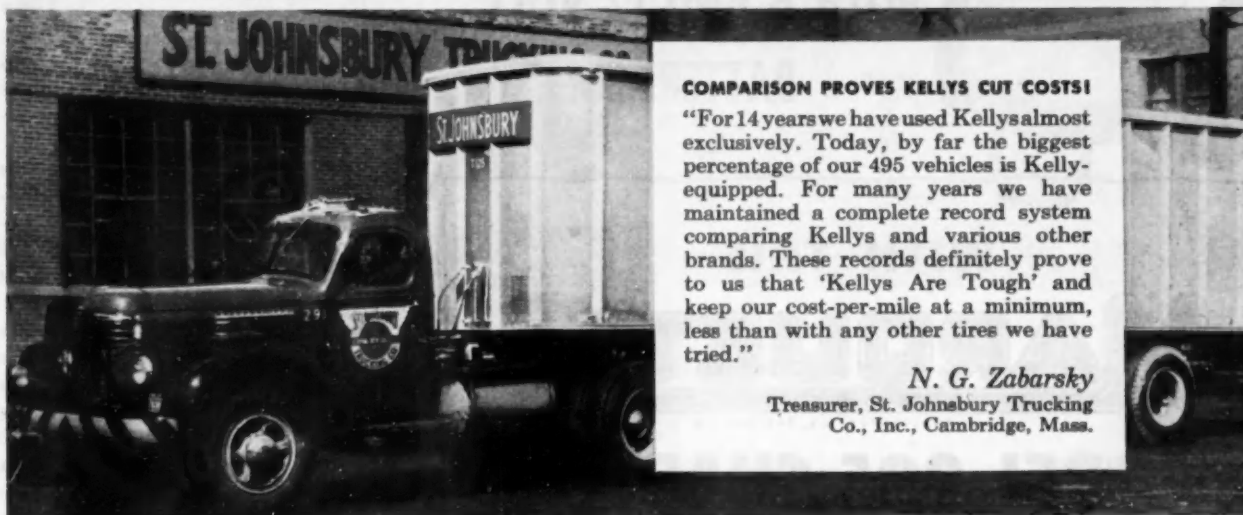
# ROLL ON KELLYS!



**20 YEARS OF DEPENDABLE SERVICE!** "We are truly sold on the dependability and service we have received from Kelly Tires over the past 20 years. Our tires must withstand the toughest wear in heavy hauling, both on and off the road. We are especially pleased with the mileage records and long wear of your Dual Tracs on our 'straddle' trucks. Your CHT Tire has been just as dependable on long hauls in heavy load-high speed operation."

*John J. Smith*

Manager, W. W. Smith & Sons, Philadelphia, Pa.



## COMPARISON PROVES KELLYS CUT COSTS!

"For 14 years we have used Kellys almost exclusively. Today, by far the biggest percentage of our 495 vehicles is Kelly-equipped. For many years we have maintained a complete record system comparing Kellys and various other brands. These records definitely prove to us that 'Kellys Are Tough' and keep our cost-per-mile at a minimum, less than with any other tires we have tried."

*N. G. Zabarsky*

Treasurer, St. Johnsbury Trucking Co., Inc., Cambridge, Mass.

Truc Trac  
Delivery

Truc Trac  
Highway

Commercial  
Heavy Tread

Dual Trac  
Special Service

Lug Trac  
Special Service



Kelly  
job

September, 1952



## Insurance . . .

Continued from Page 110

upon a safety program. The pride of a good safety record becomes a welcome public relations feature of his company. He starts to realize that his safer operation pays the dividends of every investment he has made in safety activities as he begins to enjoy a better insurance rate. As he strives for better

safety records and increased safety activities he becomes more and more insurance conscious.

"Finally he approaches the stage where the company can enjoy the better features of insurance reserved for the most successful, safety-conscious operators. This is the retrospective plan."

In summarizing his remarks Mr. Sechrist stated his company, which incidentally is well known on a national level for its safety activities, now enjoys a 50 per cent reduction in its insurance budget over the period of only a few years ago.

## The "Big Pitfall"

BUT the real punch line of the day came from the final speaker, William F. Crosset, president of the company which bears his name in Warren, Pa., and also a tank truck operation. Said Mr. Crosset: "Our insurance cost today is exactly one-quarter what it was twelve years ago."

Speaking from the experience of his top level position, Mr. Crosset emphasized what he called the "big pitfall" which he defined as the temptation to shop around for the cheapest insurance you can get. All too often, he pointed out, this hit or miss plan of buying insurance ends up with no insurance at all as the operators shops from one insurance company to another as his accident goes up. The end result is always higher cost.

"The motor carrier who really understands the business," said Mr. Crosset, "certainly will consider his insurance program and study it as closely as any other part of his operation. . . . What could be more ridiculous than a motor carrier who confined his close study of his operation only to selection of equipment and ignored maintenance; or to maintenance and ignored driver selection and training; or to any other part of his operations and ignored another phase of it that represented part of his operating cost."

"If you have been having problems with your insurance coverage, be honest with yourself. Take your problems to a top notch, first class underwriter and . . . quickly rid yourself of at least one of the headaches of your fleet operation."

Now let's assume your incurred loss for the policy period amounted to \$20,000. By reading the chart, your retrospective premium amounts to \$32,000 and you are entitled to a refund of \$8,000.

The actual premium at the end of the year is computed by multiplying the total loss by a loss conversion factor applied to provide for claim handling expense, in this case 1.16. \$20,000 x 1.16 amounts to \$23,200. To this is added a basic premium (covering administration and other overhead) amounting here to 22 per cent of the standard premium or \$8,800. The total (\$23,200 plus \$8,800) amounts to the \$32,000 shown.

As the chart shows, if losses incurred amounted to \$27,000 you would just about break even. If the losses went higher, the chart shows the actual premium you would pay up to a maximum of \$80,000. Such a ceiling (200 per cent of the standard premium) is usually incorporated in the policy.

END

Please Resume Reading Page 70



# Quick Charge

## BOTH 6 AND 12 VOLT BATTERIES

WITH THIS

# MARQUETTE

REGISTERED U.S. PAT. OFFICE

## MODEL 205 CHARGER

Delays in your business cost money. A fully charged battery means a quick get-a-way . . . less wasted time, less idle equip-

ment. So make sure of prompt starting every day . . . keep this dual voltage charger in your garage. Marquette is a top quality machine that will soon pay off in helping to keep your trucks rolling. Get it from your jobber.

**MARQUETTE  
MANUFACTURING  
COMPANY, INC.**

307 East Hennepin Ave.,  
Minneapolis 14, Minnesota

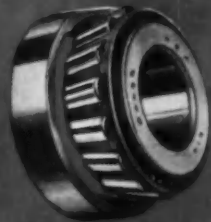
BATTERY CHARGERS - TOW CRANES  
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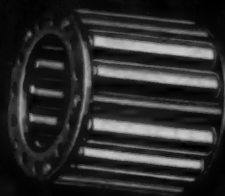
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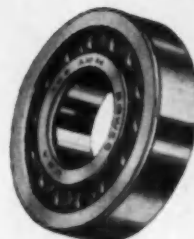
Tapered  
roller bearings



Journal  
roller assemblies



Straight  
roller bearings



BOWER

TAPERED AND STRAIGHT ROLLER BEARINGS

When you need quality roller bearings—with "right-now" service—get Bower roller bearings from your Federal-Mogul jobber!

You get both tapered and straight roller bearings in the Bower line—famous in original equipment. And you can depend on "right-now" Federal-Mogul service. Ask your Federal-Mogul jobber!

FEDERAL-MOGUL SERVICE

(Division of Federal-Mogul Corporation)  
DETROIT 13, MICHIGAN



# Legislative Round Up

LEGISLATURES in sixteen states met in regular session this year, and six states held special sessions. All of these legislatures have adjourned with the exception of California, now holding its second special session.

Details of the more important legislation enacted affecting bus and truck operators are as follows:

ALABAMA will present to the elec-

torate an anti-diversion of highway funds constitutional amendment in November. The measure was passed last year.

ARIZONA enacted a similar amendment for referendum in November.

DISTRICT OF COLUMBIA increased motor fuel taxes 4-5¢, effective July 1, 1952.

GEORGIA will also refer an anti-

diversion amendment passed last year to the voters in November. Uniform hand and arm signal legislation was passed.

IDAHO gave the Governor authority to waive certain provisions of the state's ton mile tax law with respect to out-of-state truckers.

KENTUCKY authorized reciprocity to interstate buses, permitted first and second class cities to establish off-street parking facilities using parking meter revenue to secure bonds for financing, and prohibited television receivers in motor vehicles unless permitted by Commissioner of State Police.

LOUISIANA reduced its gasoline and diesel fuel tax from 9 to 7¢ per gallon effective August 31, 1952, and enacted a financial responsibility law.

MASSACHUSETTS increased fuel taxes 4.3-5¢ effective January 1, 1953, and passed a law requiring red reflectors on every commercial vehicle and trailer with gross weight over 12,000 lb.

MISSISSIPPI passed a financial responsibility act.

MONTANA electors will vote in November to pass on an initiative petition to increase the gasoline tax from 6 to 7¢.

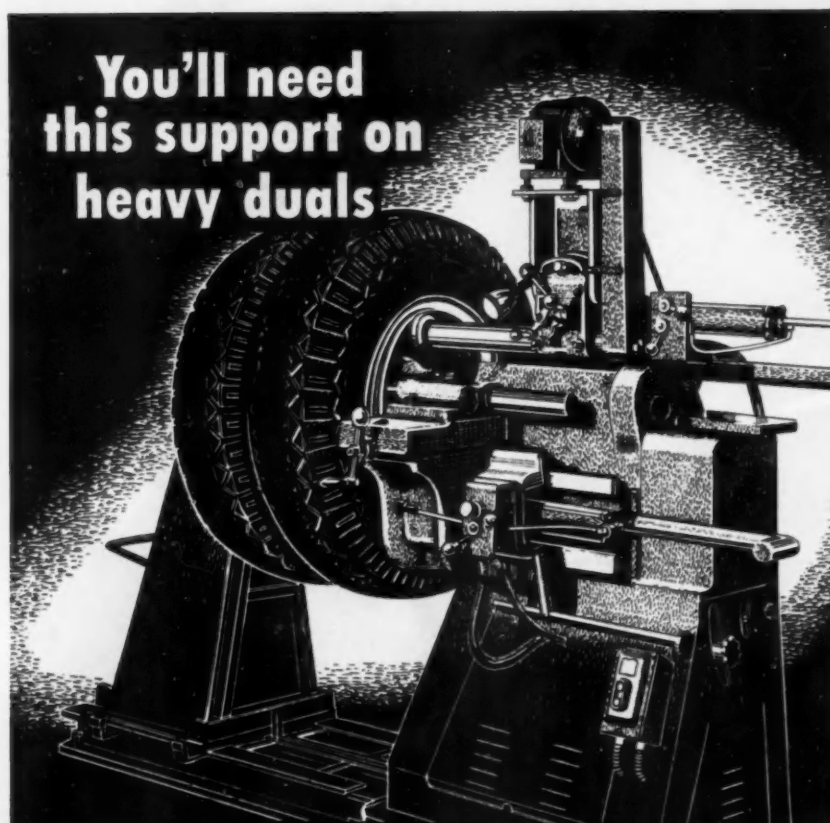
MISSOURI upped fuel taxes 2-3¢ effective July 29, 1952. Registration fees for truck and buses were increased, up to 300 per cent in heavier weight classifications. The Public Service Commission Bus and Truck Law was rewritten, including a requirement that common and contract carriers pay \$25 for an operating authority. These laws were effective July 29, 1952. New overload fines are 2¢ per lb for excess weight up to 500 lb 5¢ per lb for excess between 500 and 1000 lb, and 10¢ per lb for excess above 1000 lb.

NEW JERSEY authorized counties and municipalities to use parking meter revenue to establish off-street parking facilities. Effective January 1, 1952, buses, trucks, trailers and semi-trailers over 3 ton gross weight are required to have mudguards unless rear wheel protection is afforded by fenders or other means. A financial responsibility law was passed.

RHODE ISLAND and SOUTH CAROLINA also enacted a financial responsibility laws.

VIRGINIA Assembly members concurred in a resolution against the use of highway funds for other than highway purposes. Approval was given bills permitting operation of buses 102 in. wide in cities and towns and 40 ft long on designated highways. A new law requires tail lamps and clearance lights to be visible 500 ft instead of 300 ft.

**You'll need  
this support on  
heavy duals**



Why? To prevent arbor sag and taper cutting. ✓ Turns a true diameter with heaviest drum assemblies. ✓ Takes up to 16" cutting depth, 40" diameter, required on new dual wheels and off-the-road equipment. ✓ Turns a micro-inch finish without drum taper, with exclusive Timken Live-center outboard arbor support. ✓ Hydraulically controlled tool traverse and independent grinder, or turns and grinds simultaneously. Send coupon for details. Lempco Products, Inc., Bedford, Ohio.

**LEMPCO  
DRUM LATHES**

for 35 years... a leading  
builder of machine tools.

Lempco  
Products, Inc.  
Bedford, Ohio

GENTLEMEN: Kindly send details on Lempco SDH Hydraulic Drum Lathe with full 16" tool travel.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_



You wouldn't buy a truck  
today with solid tires!



Why buy any truck without  
*hypoid* axle gearing?

When you buy a truck, you want one that not only looks modern but is modern—all the way through! That's why it's so important to make sure that every truck you buy has Timken-Detroit Axles with Hypoid Gearing.

Designed and built to stand today's rugged work loads, dependable Hypoid Gearing is tried and proved by billions of ton-miles of operation. Even more important, Hypoid Gearing is a valuable aid in boosting profits—adds miles to the life of your trucks at lower maintenance costs.

The next time you buy trucks, GO MODERN—GO HYPOID! Specify Timken-Detroit Axles and Brakes!

Go  
modern...  
Go  
*hypoid!*

The offset Hypoid pinion is bigger and stronger. Bearings are bigger. More teeth are in contact, reducing loading per unit of contact area. Torque-transmitting capacity is increased. Slower gear ratios are practical without loss of strength.

Only Timken-Detroit offers Hypoid Gearing in all three types of final drives... single-reduction, double-reduction, and two-speed double-reduction... in a complete range of capacities.



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From this great plant come  
the world's finest trailer axles!



Before any trailer axle is put into production at Timken-Detroit's Kenton plant, months—and even years—are spent in designing, developing and testing. Shown above is just a portion of Timken-Detroit's engineering department.

Trailer axles are *important* at The Timken-Detroit Axle Company! That's why this great Timken-Detroit plant is devoted to developing and producing the finest trailer axles on the road. Located at Kenton, Ohio, this modern plant is completely equipped to mass-produce trailer axles of every capacity. It is staffed by highly trained technicians who have at their fingertips the vast engineering and research facilities of The Timken-Detroit Axle Company. Even more important, these fully qualified specialists can draw upon more than 40 years of Timken-Detroit experience in building axles for trucks, buses and trailers. Yes, just as they do with driving axles, so too, does Timken-Detroit point the way to *finer* trailer axles.

WORLD'S LARGEST MANUFACTURER OF  
AXLES FOR TRUCKS, BUSES AND TRAILERS

PLANTS AT:

Detroit and Jackson, Mich. • Oshkosh, Wis. • Utica, N. Y.  
Ashtabula, Kenton and Newark, Ohio • Newcastle, Pa.



# LP Gas in the Fleet Field

Continued from Page 71

propane and not a mixture having a lower octane number rating.

As a direct comparison, an engine setup for use of ethyl gasoline can't be operated on regular gasoline without detonation and possible damage if high load factors are imposed on the engine. An LPG fuel having high percentage of butane will stand a considerable increase in compression ratio over gasoline, but propane will stand a still greater increase as indicated, of course, by the relative octane ratings. The terms "butane" and "propane" have in the past been rather loosely used, either name being applied to an LPG which may be composed of largely one or the other and most likely both. However, in buying from a refinery or large dealer organization in appreciable quantity, fuel can be obtained to specification desired or recommended for the engine setup.

An alternative, of course, is to have the engine setup with compression ratio and spark advance suitable for about a 60-40 butane-propane, so that a wider range of LPG fuels could be used without fear of possible imperfect results on engine maintenance. This procedure is recommended particularly if, as in the case of truck use over long distances, fuel must be purchased at various sources. However, such procedure will not produce optimum fuel mileage, especially if straight propane might in some cases be used. This again would be similar to the case of using hi-octane gasoline in an engine of low compression ratio in that the full potentialities of the fuel are not being realized.

Butane, commercial mixture, has a spark tolerance curve similar to gasoline in that the spark can be advanced with increasing engine RPM. Propane on the other hand tends toward a high speed knock or ping rather than low speed; in other words, it may be found, depending on compression ratio, etc., that propane can have more spark advance at lower speeds than in the high speed range. Propylene is a constituent of LPG very similar to propane and exhibiting a similar spark tolerance characteristic. This constituent is not usually found in very large percentage in LPG as marketed in the West, although it may comprise 50 per cent or better of LPG sold in the East. It is usually extracted from LPG for other uses, especially if the fuel is a refinery product. At the same compression ratio, propylene exhibits a greater tend-

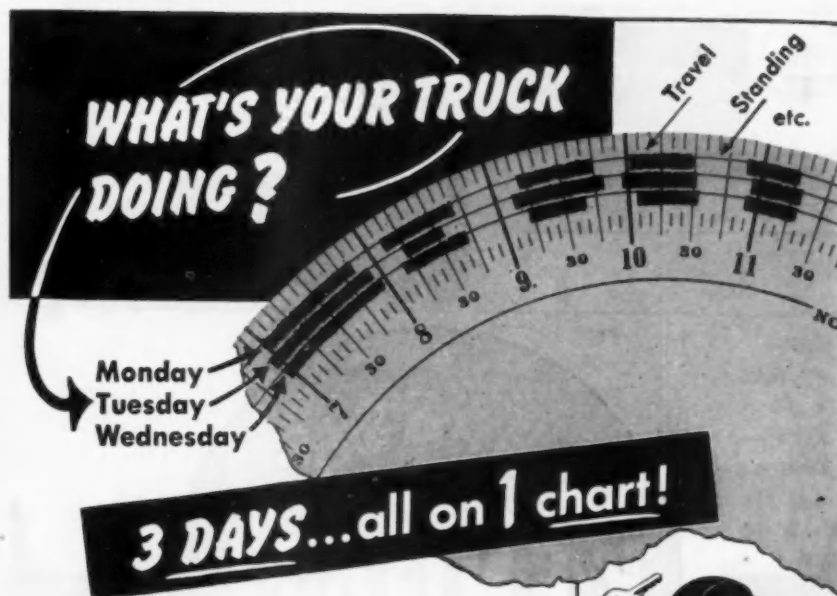
ency toward high speed knock than propane.

## How Engines Digest It

LPG fuel for use in internal combustion engines is supplied in liquid state under moderate pressure in con-

tainers, the construction of which is governed by strict regulations. In general, the liquid fuel is supplied to the engine through two stages of pressure regulation to a mixing valve or carburetor where it enters the engine as a dry gas. Being a dry gas and not a liquid, it has no tendency to wash lubricating oil from cylinder walls or to pass down by piston rings and dilute the oil in the engine sump. Therefore, due to this characteristic, the service life of cylinder bores and piston rings is extended a surprising amount.

(TURN TO PAGE 120, PLEASE)



## Mr. Truck Owner—

That's what we offer you.

Servis Recorder, Model TRT, records the travel time—the busy time—of your truck for 3 days, and 3 nights, on one chart.

Think of it! You wind the clock, put in the chart, turn the key in the Yale lock, and never touch it again for 3 days!

A big chart it is, too, 6 inches in diameter... a large-scale record... no need to squint, or use a glass.

Over the week-end: You can still change charts daily if you want to, but when the week-end comes along this Model is able to take care of it.

Now isn't this the obvious way to manage motor trucks? Write for full information. The Service Recorder Company, 1375 Euclid Avenue, Cleveland 15, Ohio.



**SERVIS RECORDER**  
Model TRT  
(3-Day Model)

It's the same simple instrument, attached to the truck the same simple way: just 3 screws or bolts. "You could nail it on and it would work."

## 7-day MODEL

Where necessary  
it is available,  
at extra cost.

## The Servis Recorder

TELLS EVERY MOVE YOUR TRUCK MAKES



## LP Gas in the Fleet Field

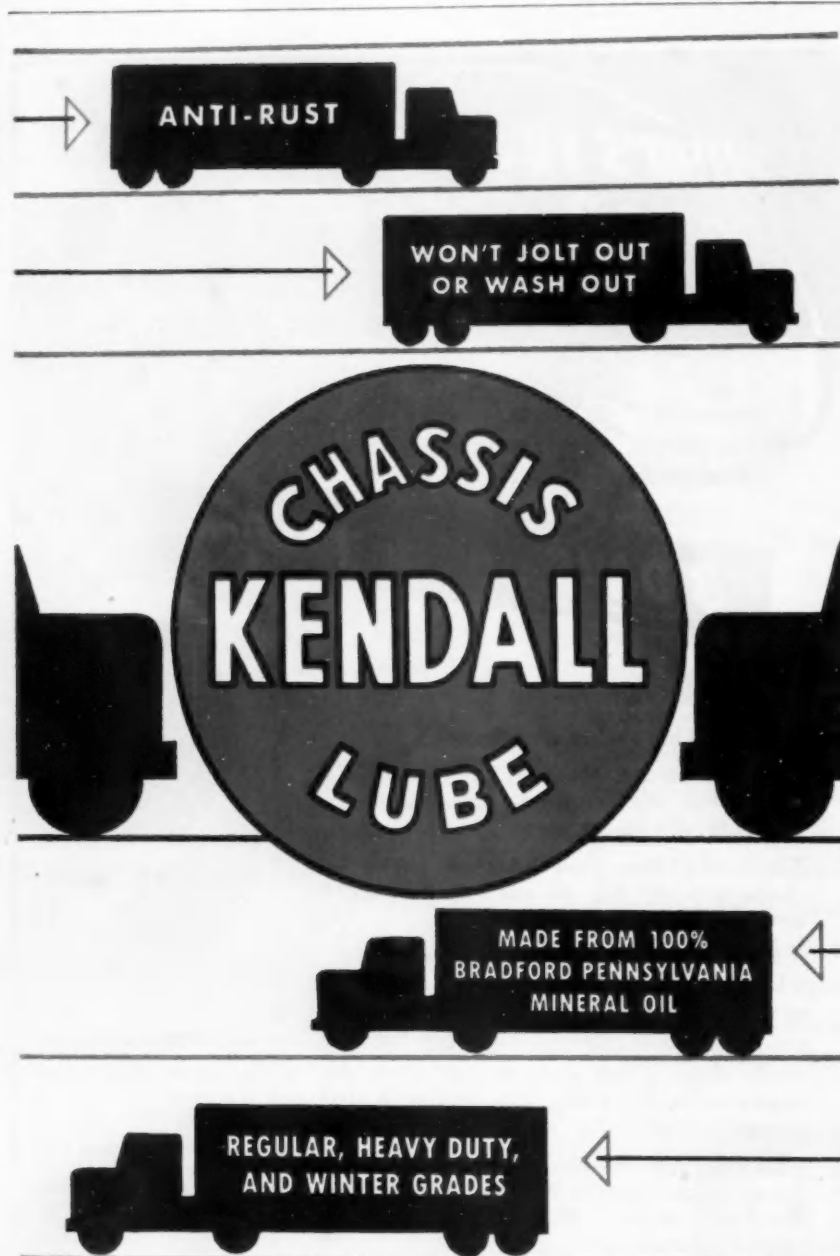
Continued from Page 119

In many cases the mileage between overhaul has been twice or three times that obtainable on ordinary liquid fuels.

Due to the higher compression ratio generally used, higher outputs and higher combustion chamber temperatures can be expected and so it is considered advisable to use exhaust valves and seat inserts faced with a hard material and top piston rings with chrome

face. This has been Hall-Scott practice.

Since LPG does enter the engine cylinder as a dry gas, then, of course, no intake hot spot is required. In fact, every effort should be made to separate the intake and exhaust manifolds so that the intake charge cannot be heated. Running a cold intake manifold improves volumetric efficiency and hence engine output. Also, since distribution with a dry gas is not the problem that it is with vaporized fuel, the intake manifold can be somewhat larger in cross-section thus further improving volumetric efficiency.



There's a KENDALL Lubricant For Every Requirement

**KENDALL REFINING CO.**

Bradford, Pennsylvania

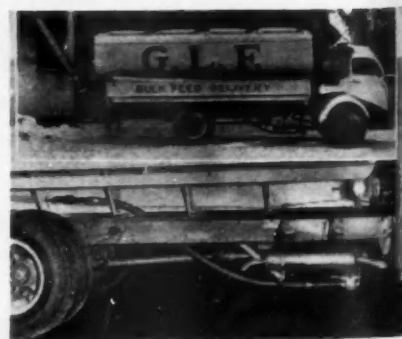
The equipment required on a vehicle in order to use LPG fuel which differs from similar equipment used with gasoline generally includes fuel tank or tanks, fuel filter, "converter" or "regulator," carburetor, and piping for both fuel and water.

The fuel tank for LPG must have a designed pressure of 1.25 times the vapor pressure of the liquid carried, and must be hydrostatically tested to one and a half times their rated working pressure. Of particular importance is outage space of at least 10 per cent of the tank capacity for thermal expansion of the liquid fuel. This is usually accomplished by use of a "90 per cent full valve." A special LPG tank is available with a small tank of regulation outage capacity built inside it and arranged so that, by use of a special fitting, during the filling operation the small tank is closed off and can't receive fuel. After the tank is filled and special filling fitting withdrawn, the small inner tank is then connected automatically to form the required outage capacity or expansion space. A pressure relief valve must be provided which will start to discharge at 125 per cent of the rated pressure of the tank and be full open at 150 per cent of the rated pressure.

Most installations have both a liquid fuel valve which draws from the bottom of the tank and a vapor valve which draws from the top of the tank. These are piped together after the valves and a single line leads to the vaporizer at the engine. The vapor valve is not

(TURN TO PAGE 122, PLEASE)

### Bulk Feed Delivery Eased



Bulk feed delivered to farms in this tank-type truck body is pumped from the rear through a large metal hose into the grain storage area. Formerly a power take-off mounted under the transmission operated the pump through a series of universal joints, but continued reports of failure made this system impractical. The bottom picture shows how a flexible shaft, made by Stow Mfg. Co., Binghamton, N. Y., now operates the pump mechanism, eliminating the troublesome universal joints.

# The Gold Rush is On!!!



No. 777-S-4—"the hard-sleeve bar."

**4-year-old Engines are flocking in for overhauls . . .**

**Rebore them for Profit with Van Norman Boring Bars!**

Here's the way to make more money NOW! . . . sell more service to the millions of owners of 4-year-old and older cars, trucks, buses and tractors, that are going to be in service a long time yet. Sell complete overhauls . . . complete motor-rebuilding jobs. And start with the basis of all quality jobs . . . rebore with a Van Norman Per-fect-O Bar. This is the quickest and easiest bar to operate . . . the only bar with the 4 "Cat's Paws" that support the cutter all the way down . . . to a perfect job in one quick cut per cylinder.

So get set for big profits now, with the Van Norman Bar you need for your work... "the bar that sells more service". See your jobber or write Van Norman Co., Springfield 7, Mass.

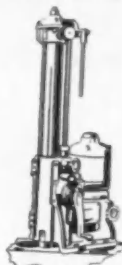
## A Van Norman Bar for Every Job



944-S — the light-fast, portable bar with Sucker-Outer for car dealers, garages, service stations.



777-S-4 — the portable bar with Sucker-Outer — for big machines, trucks with hard cylinder sleeves, etc. Shown above.



898-18 — one of the giant bars, for heavy trucks, big diesels, all heavy-duty work.

**The Best-Equipped Shop Gets the Business!**

that's why "It Pays to Van Normanize"

ery Eased

farms in this pumped from metal hose into a. Formerly a ed under the the pump niversal joints, of failure made l. The bottom flexible shaft, Binghamton, pump mechan-oublesome uni-



**ERIE  
WHEELS...**

**"Built for the JOB"**

Would you try to pull a stump with a team of race horses? . . . No! These Percherons are "built for the job"—rugged, strong, bred with plenty of heart. Erie Wheels are the rugged "Percherons" of highway transportation.

**Erie Wheels provide:**

- Rugged Strength for heavy loads
- Resiliency of Malleable Iron for rough going
- Spoke design, for cooler tires and brakedrums
- Demountable rims, for easy tire changing
- Tubular spokes, for minimum unsprung weight

*Specify . . .*

*Erie Wheels*

**ERIE MALLEABLE IRON COMPANY**

*Automotive Wheel Division*  
**ERIE • PA.**



## LP Gas in the Fleet Field

Continued from Page 120

always necessary, as its principal function is to build up the line pressure gradually so as to prevent damage to the vaporizer. Once the line pressure has been brought up to the tank pressure, the liquid valve is opened and the vapor valve closed. Except on the lightest loads, the vapor valve will not discharge sufficient fuel to operate the engine. When a blend of butane-propane is used, the more volatile propane will be used more rapidly than the butane when taken through the vapor valve, so that the remaining mixture will gradually become richer in butane. This drops both the tank pressure and the octane number, either or both of which might be disadvantageous in a given installation. When the fuel is taken through the liquid valve, on the other hand, the mixture delivered and the mixture remaining stay practically constant.

All tubing and fittings must be of high pressure type and fuel lines must be kept away from exhaust lines. Fuel lines are ordinarily protected with a loom and clamped to the frame in the same fashion as gasoline lines.

### Maintenance

Maintenance expense on LPG carburetors and converters is very slight. Diaphragms seldom wear out, although dirt, sulphur, tank or line corrosion deposits sometimes build up on the valves and cause some internal damage. This is some wear in the levers and pivots of the valves. Springs sometimes break. Attention to the internal parts is seldom necessary between engine overhauls if effective fuel filters are used ahead of the converter. Kits containing valve seats, gaskets, diaphragms, and springs are serviced by the manufacturers of the equipment. Cleanliness and low sulphur content of the fuel as purchased is the best safeguard of the LPG equipment.

The fuel filter is usually a small unit with a shut off valve incorporated in it, and it is used in the liquid line between the fuel tank and the "regulator" or "vaporizer" unit. It is a wise precaution to mount this filter just aft of the cab on the driver's side so that in case of any emergency, the driver can easily reach the shut off valve to stop all flow of fuel from the tank.

**END**

*Please Resume Reading Page 72*



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# RECONDITION YOUR ENGINE

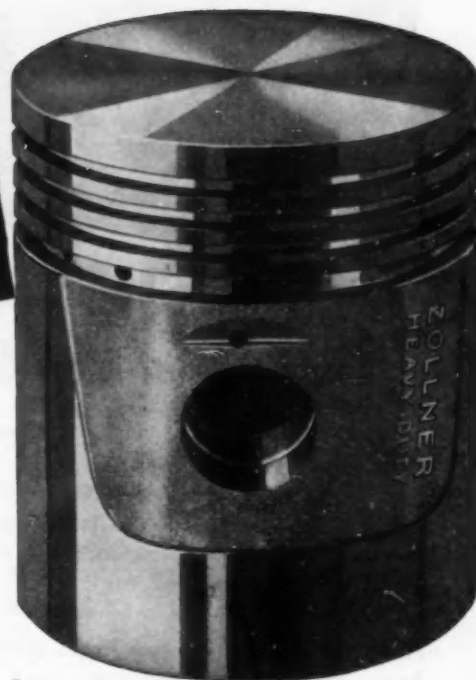
FOR MAXIMUM  
**POWER**

FOR **LOWEST**  
OPERATING COST

## REPLACE WITH ZOLLNER

### THE "ENGINEER APPROVED" PISTON

Expertly engineered pistons make a big difference in engine performance — and operating cost. That's why it's always best to insist on Zollner "Engineer Approved" Pistons when reconditioning your engines. The big majority of engine manufacturers work hand-in-hand with Zollner engineers in the development of pistons best suited to heavy-duty use. Over 70% of all makes of trucks and buses are Zollner equipped — and have been for years. Only when you use Zollners can you be sure that your pistons are expertly designed and precision-made to the individual engine specification for utmost performance and economy of operation.



*Used and Recommended by over 70%  
of all Truck and Bus Manufacturers.*

# ZOLLNER

## HEAVY DUTY PISTON EQUIPMENT

ZOLLNER MACHINE WORKS

FORT WAYNE, INDIANA

# A Review of Power Steering

Continued from Page 70

Chrysler and DeSoto passenger cars.  
Bendix Products Division, Bendix Aviation Corp.—Heavy duty.

## Integral Linkage Type

Has power cylinder, integral relief and integral servo valves. Connected directly to the drag link with the piston rod end anchored to vehicle frame. Valve is actuated by pitman arm move-

ment in response to steering wheel movement. Power is applied directly to steering linkage.

Advantages are in simplified plumbing as above, adaptability to most existing design (although possibly not so much so as in "A" above), and in the fact that all road shock is transmitted back to frame rather than to steering gear.

Disadvantage is in occasional difficulty in adapting to certain designs such as some cab-over-engine vehicles, etc., due to space limitations.

This type of equipment is manufactured by Vickers Incorporated, and is now used primarily on heavy duty equipment.

## Split Linkage Type

Has power cylinder mounted at most suitable location in the steering linkage with one end of cylinder anchored to some part of the frame or axle. Separate control valve is located in the drag link and is actuated by pitman arm movement in response to steering wheel movement.

Advantages are in facts that this type of arrangement is not restrictive as to mounting and can be designed into almost any type vehicle with proper engineering, and that road shock is transmitted back to frame (or axle), rather than to steering gear.

Disadvantage is in more complicated plumbing since "split" feature disallows integral piping. This type of equipment is manufactured by and is currently being used by Garrison Mfg. Co. and Ross Gear and Tool Co.

The arbitrary and much advertised questions of "full" versus "partial" power steering, "road feel," wheel recovery, etc., are, in my opinion, largely academic since to the best of my knowledge all of these qualities can either be introduced into or left out of any of the above systems by use of properly designed valve centering springs and/or hydraulic reaction plungers that allow the driver to "feel" how much hydraulic pressure he is causing to be applied.

There is not too much general agreement on the relative merits of these points as yet, and it can be expected that sooner or later the fleet operators and the public will make the final decision.

There is also a lot of discussion and argument as to whether or not, with the advent of power steering, the number of wheel turns to complete a steering cycle should be materially reduced. Here again, the operators and the public will eventually decide the question.

All three of these basic designs have been thoroughly proved in the field and, as indicated, each has its advantages and disadvantages. It is my personal opinion that the most interesting future developments will probably be with the "Split Linkage Type" since its inherent flexibility offers great possibilities for new application.

END

Please Resume Reading Page 71

## in the WAREHOUSE and on the ROAD



## WISCONSIN HEAVY-DUTY Air-Cooled ENGINES Fit the Job and the Machine

Towing up to 20,000 lbs. in grocery warehouses or keeping tons of ice cream bars cold . . . it's all in a day's work for Wisconsin-powered equipment.

And this HYSTER Turret Tug, built by Hyster Company and the Fruehauf Aerovan Trail-Aire unit, built by Fruehauf Trailer Company, are only two of the many types of units you'll find in the distribution field.

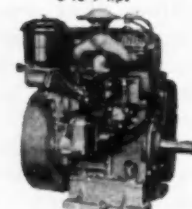
For example, there are fork trucks working in warehouses and on loading platforms. You'll find air compressors on service trucks and starting engines on auxiliary power plants for refrigerated warehouses . . . all Wisconsin Powered. Wisconsin power actually supplies a vital power need in this field, just as it does in almost every other field you can name . . . dominant power in the 3 to 30 hp. range.

Features such as fool-proof air-cooling, tapered roller bearings at both ends of the shaft, positive lubrication, and rugged construction inside and out are among the reasons for widespread acceptance everywhere.

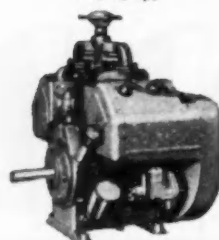
Write for "Power Magic" telling about all models, single-cylinder, 2-cylinder and V-type 4-cylinder models.



single-cylinder models,  
3 to 9 hp.



2-cylinder models,  
7 to 13 hp.



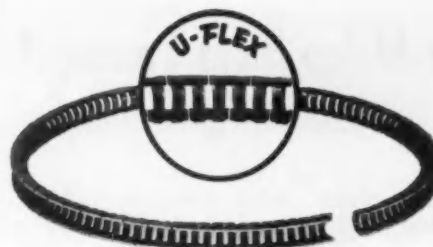
V-type 4-cylinder  
models, 15 to 30 hp.



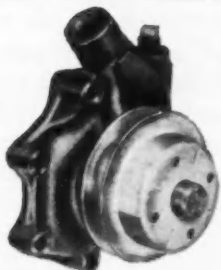
## WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines  
MILWAUKEE 46, WISCONSIN

parts you can  
take for granted



U-FLEX OIL CONTROL PISTON RING



AUTOMOTIVE WATER PUMPS



VALVE SEAT  
INSERTS



CUTTING AND GRINDING MACHINE PUMPS



AUTOMOTIVE  
AND AIRCRAFT  
PISTON PINS



HEAVY DUTY  
CYLINDER  
SLEEVES

FOR over 50 years, Thompson Products has been making original equipment and precision replacement parts for cars, buses, trucks, tractors and industrial equipment—both diesel and gasoline.

From screw caps in 1901, Thompson's versatility has grown to include such vital engine parts as piston pins for powerful, dependable aircraft; valve seat inserts for rugged bulldog tanks; cylinder sleeves to stand up in toughest heavy-duty service; pumps to cool your product or your engine and the revolutionary, new U-Flex Oil Control Piston Ring.

Thompson is versatile! But more important, every one of Thompson's hundreds of automotive and aircraft parts have the reputation of being produced to the closest tolerances known to the industry. Automotive builders and repairmen agree, "The name Thompson means original equipment precision parts that you can take for granted." They know "You can count on Thompson" for dependability of supply, quality, exact tolerances and maximum performance and service.

If you are having trouble with engine parts—if you need a better, more dependable supplier, write or call.

YOU CAN COUNT ON...



Thompson Products, Inc.

2196 Clarkwood Road

Cleveland 3, Ohio

SPECIAL PRODUCTS DIVISION



# More Miles from Transmission Bearings

Continued from Page 72

direct drive clutch, lubrication of this bearing also presents a problem.

Two of the major causes of pilot bearing failure have nothing to do with the gear loads, eccentricity, or lubrication.

One of these is failure due to damage during assembly. To get maximum capacity in the available space, a

roller bearing is frequently used in this position. For assembly reasons, a snap ring or equivalent retainer is required at one end of the races. If, in assembling the drive gear over the OD of the bearing or the mainshaft into the bore, it becomes necessary to drive on either part in such a manner that the im-

part is taken on the retainer ring, it may be driven from its seat or the thin section of race beyond the ring may be broken in either case, permitting the bearing to fall apart.

Let us assume that all proper precautions have been taken while assembling the drive gear and mainshaft, and that the bearing is in good condition after these parts have been assembled into the transmission. Let us further assume that the companion flange is a tight fit on the output shaft spline. If the flange is not pushed on with care, using the proper tools, the mechanic can damage every bearing on the mainshaft.

The other type of failure referred to as not being a direct result of gear loads, eccentricity of lubrication occurs in direct drive when the bearing is not carrying any gear load and when there is no relative rotation between inner and outer race.

Needle bearings are also used under the mainshaft gears in some installations. It is important that the proper number of correct needles be used. One needle oversize in diameter or slightly long in length could cause failure of the complete row of needles. Needle bearings are susceptible to false brinelling in this type of application when the gear is clutched and rotating loaded.

The clutch release bearing, although a part of the clutch assembly, plays a vital role in the transmission package and should be considered here. Ball bearings are used in this position which are designed to favor thrust carrying capacity. The clutch release shaft and throw out fork should be square with the transmission drive gear in order to eliminate cocking of the bearing.

Lubrication is a serious problem and requires careful periodic checks to supply grease in the correct quantity. Over-greasing can be as troublesome as under-greasing. Improper clutch adjustment causes continuous high speed operation under some load instead of the intermittent loading only, for which the bearing was designed.

Since the function of the bearings is to support the gears on their proper centers, it is apparent that good gear life is dependent on good bearing life. Bearings badly lapped out from improper lubricant or dirt

(TURN TO PAGE 128, PLEASE)

## POSITIONING PROBLEM? An AEROL product will solve it!

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YOU SAVE TIME AND MONEY  
with an AEROL STAND!**

CLAYBORNE STANDS ARE NOW AEROL PRODUCTS—This rugged No. 400 Stand is first choice for bus, truck and tractor engines weighing up to 1,500 lbs. Other heavy-duty stands are available for virtually every positioning problem.



There is an AEROL Stand for every type of work—one that is exactly right for your shop!

Take your choice of models: universal or special—end or side roll-over—portable or stationary—folding or rigid—regular or heavy-duty. The AEROL line is the most complete in the Industry!

Best of all, AEROL Stands cost no more than less versatile units or hazardous "home-made" equipment.

AEROL Stands are made by The Cleveland Pneumatic Tool Co., and are sold only through jobbers. Distributed in Canada by Vic Mathewson Co., Ltd., Toronto 14, Canada.



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Automotive Division  
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Please send me a copy of the new AEROL catalog.

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*You get these  
4 big  
maintenance  
advantages*

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YOUR CHEVROLET  
DEALER!**

- 1** Expert help in solving your service problems  
and
- 2** Availability of a well-balanced stock of precision-  
built Chevrolet parts that
- 3** Help reduce fleet maintenance and operation  
costs and *thus*
- 4** Help keep your Chevrolet trucks out of the shop  
and on the road!



**Your Chevrolet Dealer is ready,  
willing and able to give you all four!  
See him today!**

## Transmission Bearings

Continued from Page 126

in the oil cannot hold gears in proper alignment to distribute the load equally along the tooth face.

Transmission manufacturers are frequently asked why there is such a difference between the life of the gears and the life of the bearings. The answer is that gears are far less suscep-

tible to damage caused by improper lubricant or dirt.

Due to the close fits which must be maintained in bearings, dirt frequently locks the balls or rollers causing skidding or even turning of the race in the housing with quick failures resulting.

Many bearings are discarded simply because dirt has entered the bearing. When the mechanic tries to spin one race relative to the other, he finds the bearing rough and replaces it with a new one although the bearing would be entirely suitable for use if cleaned.

All too often we hear of bearings failing in nearly new transmissions, only to find that perfectly good bearings were being discarded.

There are many makes and types of lubricants which have proven qualities for use in specific locations in a vehicle. These oils are indispensable in certain applications but many are not suited for the truck transmission and may cause much harm due to corrosion of bearings, plugging of oil holes, hard carbon deposits and excessive foaming.

The tooth loads can be adequately supported by a good grade of straight mineral\* oil, thereby eliminating any concern for corrosion, separation, or other objectionable qualities.

The transmission should be filled to its proper level and checked frequently to insure maintaining the correct quantity of lubricant. It should be drained, flushed, and refilled with clean lubricant periodically. It would be desirable to drain, flush, and refill at low mileage or break in period as you would the engine, to carry out any dirt or chips which became dislodged during the early runs.

END

Please Resume Reading Page 73

## AUTOPULSE

electric fuel pumps

HELP YOU WIN THE RACE AGAINST TIME

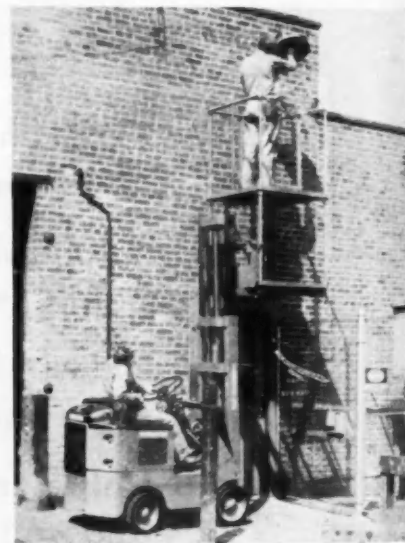
To keep costs down and profits up, your equipment must be kept rolling. Forget one cause of delay, stalling due to vapor lock, by installing Autopulse Electric Fuel Pumps. Autopulse gives the engine a constant supply of fuel at an even pressure. Autopulse is a *pusher pump*—that pushes the fuel, does not draw it to the engine. There is no vapor lock, and "percolation" of the lighter ends of the motor fuel is reduced to the minimum. At high altitude or sea level, in the hottest weather or in the dead of winter, Autopulse insures instant starting, keeps your vehicles on the job — helps you meet fast moving schedules. Write for folder and name of your nearest Autopulse Dealer.



**AUTOPULSE** *the heart of your motor*

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## Fork Lift Elevator



Plant maintenance is speeded and exposure to injuries is reduced through using a fork lift truck as a portable elevator. This Towmotor Corp., Cleveland, Ohio, fork lift truck has been equipped with a double-deck platform securely mounted on the forks. The lower deck provides carrying space for maintenance materials needed to handle the many jobs, with the top platform providing easy access to pipes, conduits, light fixtures and other wall and ceiling mounted equipment.



bearings fail-  
missions, only  
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equipment.

tember, 1952

## Packard Diesel

Continued from Page 80

likely that at the proper time, when military needs have been satisfied, this family of engines may well be groomed for normal marine service, for motor trucks and buses, off-highway vehicles, industrial power, and the gamut of other useful civilian applications.

Some impression of character of these engines may be gained from the following basic statistics: specific weight of the 6-cyl engine, complete with accessories—7.34 lb/bhp; specific weight of the V-12 is only 5.41 lb/bhp. Specific output for both 6 and V-12 is 0.352 bhp/cu in. Specific fuel consumption based on dynamometer tests is of the order of 0.4 lb/bhp-hr, some tests showing even lower values. Overall length of both engines is approximately 85 in. Condensed mechanical specifications are given in tabular form.

### Interchangeable Parts

AS will be evident later, this family of engines is based upon a standard cylinder design of 142 cu in. displacement, common to all engines and having major elements interchangeable. Among these are the following: cylinder head and wet liner assemblies; intake and exhaust valves; pistons and pins and rings; camshafts and main bearings; fuel injectors; individual fuel pump assemblies; and numerous minor parts. In addition, the crankshaft is interchangeable on both the 6 and V-12.

Common to all engines is the basic combustion system embodying a spherical precombustion chamber in the cylinder head, located directly over the center of the piston. This chamber communicates directly with the main combustion chamber through a replaceable multiple orifice. The pintle type injection nozzle sprays fuel directly into the precombustion chamber. This arrangement makes possible lower fuel line pressure and lower combustion chamber pressures.

### Easy Replacement

ANOTHER basic requirement for Navy service and equally salutary for commercial applications is the provision for ready removal and replacement of most accessories. It will be noted from the illustrations that major accessories are mounted on the side of the crankcase and can be removed individually by disconnecting the service lines. In addition, access doors are provided in the crankcase deck for inspection within the crankcase area.

In both 6 and 12-cyl engine, the

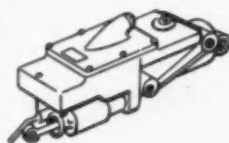
(TURN TO PAGE 130, PLEASE)

COMMERCIAL CAR JOURNAL, September, 1952

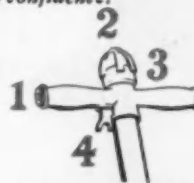
# after 21 years, the S-4 STILL LEADS 'EM ALL

## Here's why...

This brute was years ahead when introduced in 1931. No other jack has ever caught up to it. Blackhawk has continually added outstanding, exclusive refinements... so that today, as before, S-4 is the best all-purpose jack you can roll onto your floor. Order from your Blackhawk jobber... with full confidence!



**ONE-PIECE POWER UNIT**  
has no seams or pipe plugs to leak. Ideal for wash rack use. Speed and power pump are combined to speed jacking time, eliminate parts and wear. And the exclusive floating plunger allows power unit to remain stationary, prevents distortion and leakage.



**SEE WHAT FINGERTIP CONTROLS DO FOR YOU**  
(1) Press a button and flash a light on the lift spot. (2) Turn a key and lock or unlock the valve. (3) Twirl a knob for positive release valve action. (4) Pull a trigger and set the handle for any one of three convenient positions.



### TO OWNERS OF VETERAN S-4 JACKS

Factory-rebuilt power units are available from country-wide stocks. Liberal trade-in allowance for your old unit. And you can install a new one yourself in 20 minutes!

**All-purpose  
4-ton Capacity**

# BLACKHAWK®

A product of BLACKHAWK MFG. CO., Dept. J-1192, Milwaukee 1, Wisconsin

## Packard Diesel

Continued from Page 129

cylinder is fitted with four symmetrically located valves—two intake and two exhaust, the latter being salt cooled. In each case there are two camshafts per cylinder bank—one for intake, the other for exhaust. Valve faces as well as valve seats are Stellite faced, making for extremely long life and reducing service operations.

### Cylinder Detail

**B**ETWEEN the inner face of the tappet and fitting over the tip of the valve is a small button designed to provide for proper valve clearance. These buttons come in different thicknesses to make up for variations in the assembly.

The cylinder head, as shown in the cross-section of the V-12 assembly, is another unique element. It is a cylindrical precision-cast steel casting cored accurately to size, as in permanent mold casting practice, with perfect porting and precisely-cast spherical precombustion chamber which requires no further

machining. It is noteworthy that the long wet liner is seam-welded by the hidden arc technique directly to the cylinder head to produce an integral assembly, readily removable and interchangeable on all cylinders. Incidentally, the liner is nitrided to provide adequate hardness and durability.

The cylinder head is fitted within the bore in cylinder block and is held securely by means of a large threaded plug which may be seen at the top of the cylinder assembly. The plug contains internal serrations to facilitate assembly and disassembly by means of a small hand gear drive. It is also of interest that a firm, durable thread in the aluminum casting is obtained by the introduction of Helicoil inserts. A steel spacer between the threaded plug and cylinder head makes up for variations in assembly tolerances.

At its lower end the liner is adequately sealed against leakage of water and lubricant by means of a series of three Neoprene gaskets. Between the second and lower of these gaskets is an annular groove to permit drainage of fluid, if any occurs, directly to the outside of the crankcase wall through the drilled passage seen in this view.

### Aluminum Pistons

**P**ISTONS are of massive design, made of aluminum alloy forgings, provided with a specially-formed cavity in the thick head which serves as a turbulence combustion chamber. As illustrated, the piston is fitted with a series of five rings. The top three are compression rings, the top ring being chromium-plated. The fourth and fifth rings are special tapered oil rings, the fifth one being located in the lower end of the skirt.

Connecting rods are the only major elements of the assembly not interchangeable between the Six and V-12, (TURN TO PAGE 132, PLEASE)

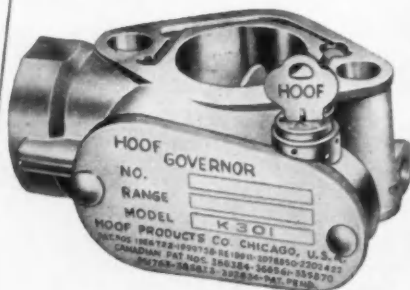
## "HOOF GOVERNORS

*cut both maintenance and  
operating costs ...  
with no change in running  
times!"*



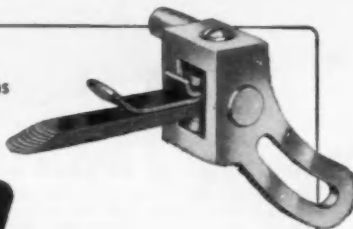
"Governed" speed doesn't necessarily mean "slow" speed. Hoof Governors simply insure that your vehicles are driven at the speed you select.

Whether this "most practical" speed is 30 mph or 60 mph, Hoof Governors provide round-the-clock protection: first, approved top speed cannot be exceeded, and second, excessive engine racing in intermediate gears is positively prevented.



Now that equipment must be conserved, Hoof protection is doubly important. Write for full facts.

A Patented, exclusive Hoof feature, this Cantilever Spring means more accurate speed control, simplified construction and longer life!



**HOOF** key and seal type  
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6543 So. Laramie Ave.,  
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"Get this—with my coat I'm good lookin' and bound to progress—with-out it I'm going to meet a tall blond!"

## CITIES SERVICE OILS WORK ON

# "The Longest, Toughest Truck Haul in the World!"



FROM DULUTH, MINN. TO FAIRBANKS,  
ALASKA ... 7000 MILES ROUND TRIP  
PER MONTH ... IN TEMPERATURES RANG-  
ING FROM 100 ABOVE TO 70 BELOW ...



*Albert Herda*

...trucker extraordinary, uses  
Cities Service "C" Series Oil  
in year round operation.

**CITIES**



**SERVICE**

Quality

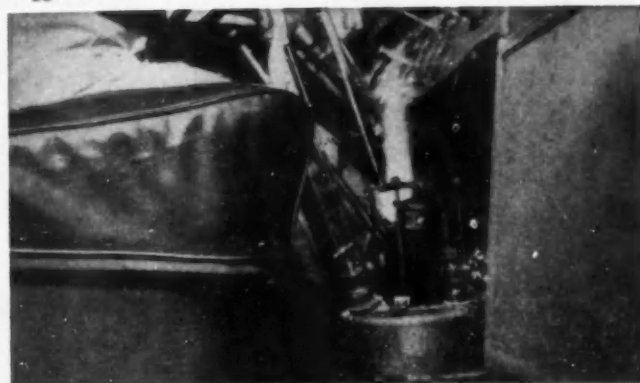
Petroleum Products



SAYS ALBERT HERDA... "Hauling everything from beer to eggs... across every kind of country... through every kind of weather... I've used Cities Service "C" Series oils and have had the best of luck. I heartily recommend Cities Service Oils for unusually rugged service as well as the ordinary job."



**HIS OWN SERVICEMAN ON LONG, LONELY HAULS ...** Besides driving, Herda handles all the jobs of truck maintenance on the road... everything from changing tires to checking the oil. During the summer when temperatures soar up over a hundred, "C" 300 Series SAE 30 gives him the long motor oil mileage and complete engine protection he must have.



**BLOWTORCH HEATS CAB IN ALASKA COLD ...** Big bus heater not enough to heat cab in extreme cold. Blowtorch aimed at feet does job. Under such tough operating conditions, Herda depends on "C" 300 Series SAE 10 to give complete lubrication and engine protection. High quality Cities Service Products can serve best in your operation too.



## Packard Diesel

Continued from Page 130

although the main bearings are interchangeable. Connecting rods for the V-12 are of blade-and-fork type similar in design detail to that of the gasoline marine engines built for Navy PT's during the last war. This construction was so successful that it has been continued in this new series for V-type engines. Crankshafts for both the Six and

V-12 engines are interchangeable. Crankshafts are of drop-forged alloy steel and nitrided to provide adequate durability. They are of seven-bearing type, counterweighted, as shown, and statically and dynamically balanced. The Houde viscous fluid damper, adopted by Packard for its passenger car engines immediately after the war, is fitted on these engines.

### Aluminum Parts

FOLLOWING previous practice, additional rigidity is imparted by the use of through-bolts—which may be

seen in the lower section of the crankcase—extending from bosses on each side, through the main bearings.

Continuing the round-up of aluminum parts, the oilpan is of aluminum, and so are the intake and exhaust manifolds, valve covers, timing gear case, accessory housings, supercharger, and a variety of other parts. In short, everything is of aluminum except such functional parts as must be made of steel. From that standpoint the family of 142 engines can be appropriately termed all-aluminum engines.

These engines feature a spherical precombustion chamber to which fuel is fed by pintle type fuel injectors. Fuel is fed by pintle type fuel injectors. Fuel injectors are supplied by American Bosch, fuel being timed and distributed from American Bosch multi-plunger fuel pumps. To effect complete interchangeability, the fuel pumps are of six-cylinder type—one being used on the Six, two on the V-12, in the latter case one being mounted on each bank. Fuel pumps included a special feature in the form of a plunger rack positioner which automatically sets the stroke and which for best starting with the rack in the initial position.

Fuel supply is regulated by an hydraulic governor to maintain specified constant engine speed throughout the load range. The governor is mounted externally and apart from the fuel pump assembly. The installation also includes an over-speed trip governor as an additional safety feature.

Use of the precombustion chamber aids in reducing primary fuel pressure in the lines and in the injectors. Ignition is initiated and peak pressure attained within the precombustion chamber, thus making for lower pressure levels in the main combustion chamber where the gases mix with the compressed air charge. The multiple orifice jet from the precombustion chamber is designed to eject a high velocity jet directly onto the center of the piston dome. Here the dispersing cone causes the jet to mushroom and thus provide the turbulence essential to complete and clean burning of the fuel.

Navy engines described here are supercharged by means of a General Electric turbocharger assembly mounted at the front end of the block. This assembly carries a large air cleaner at its outer end. Exhaust gases are directed to the turbocharger in a smooth contoured flow with a single manifold in the case of the Six and two exhaust manifolds in the case of the V-12. Boost is of the order of 20 in. gage or 50 in. absolute.

END

Please Resume Reading Page 82

COMMERCIAL CAR JOURNAL, September, 1952

# BOLSER

## THE GREAT NAME IN HIGHWAY SAFETY EQUIPMENT



**NESTED  
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**YOUR BEST  
FLARE BUY**

● An outstanding value—a real quality flare. It's compact—husky — 5" shorter than previous Fair-Way model. Features patented BOLSER nesting. Each flare has individual extinguishing cap with flag holder. When "nested" DOUBLE SEALS. Heavy gauge, all steel construction; sturdy steel bracket. Tear drop burner. Streamlined design—greatest eye appeal. Attractively priced. Baked enamel finish. Approved! Built to U. S. Commercial Standard's Specifications.

**BOLSER**—a full line of quality safety equipment. Latest in design and engineering—offers products that are known throughout the industry as the standard of comparison.

  
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**LIGHTS**

  
**ARMOURED LAMPS**

  
**MIRRORS**

  
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**DIRECTION SIGNALS**

  
**REFLECTORS**

  
**REFLECTOR FLARES**

  
**OIL BURNING FLARES**

**THE BOLSER CORP. Cedar Falls, Ia.**



**No. 2050 HEAVY DUTY  
10" BENCH GRINDER**

1 H. P. Ball-bearing motor,  
1725 R. P. M.

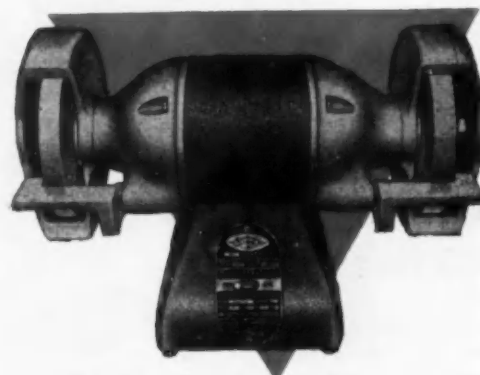
**No. 2024 HEAVY DUTY  
8" BENCH GRINDER**

$\frac{3}{4}$  H. P. Ball-bearing motor,  
3450 R. P. M.

Both oil packed and sealed, no further lubrication. Two grinding wheels, one fine and one coarse, adjustable tool rests, enclosed guards, 3 conductor cable and plug. Lights and safety eye shields extra.

# Sioux

**Highest Quality  
BENCH GRINDERS  
Each Unit Self-Contained**



**No. 2017 HEAVY DUTY  
7" BENCH GRINDER**

$\frac{1}{2}$  H. P. Ball-bearing Motor, 3450 R. P. M. Oil packed and sealed, no further lubrication. Two grinding wheels, one fine, one coarse, adjustable tool rests, enclosed guards. 3 conductor cable and plug.

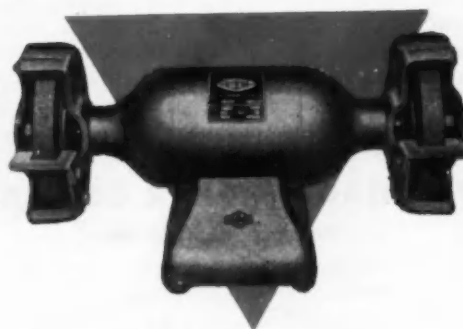


**No. 2062 PEDESTAL**

With water pot and tool tray for all Sioux Bench Grinders

**No. 2065 — 6" BENCH GRINDER**

$\frac{1}{3}$  H. P. Ball-bearing Motor, 3450 R. P. M. Oil packed and sealed, no further lubrication. Two grinding wheels, one fine, one coarse, adjustable tool rests, 3 conductor cable and plug.



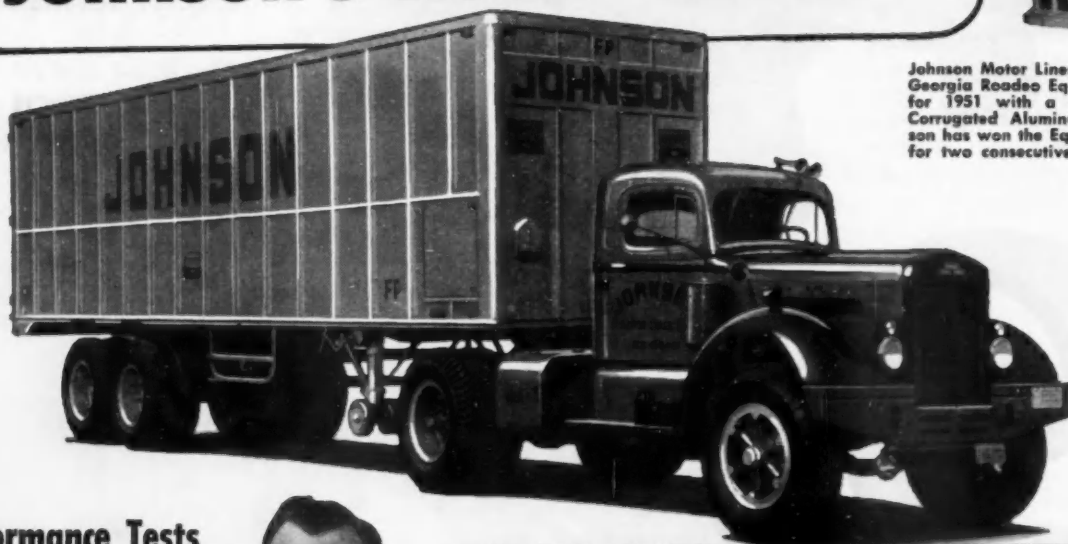
Sold only through Authorized SIOUX Distributors

**ALBERTSON & CO., INC.  
SIOUX CITY, IOWA, U.S.A.**

# GRAVITY TANDEMS roll up *Extra Mileage* in Johnson's Road Tests!



Johnson Motor Lines, Inc., was the Georgia Rodeo Equipment winner for 1951 with a Fruehauf-Corruated Aluminum Van. Johnson has won the Equipment Trophy for two consecutive years.



## "Performance Tests of GT Economy Sold Us 100 New Fruehaufs"



Says J. N. JOHNSON  
President  
Johnson Motor Lines

"In February, 1951, we purchased 15 new Gravity Tandem units for trial before replacing some of our old equipment. Thorough road tests of these units showed conclusively that GT Suspension provides additional tire mileage and substantial savings. In addition, we found that GT's are simpler and easier to maintain and handle than our other tandems.

"Having proved to ourselves that GT performance was everything we'd hoped for, we placed another order with Fruehauf, bringing our total number of GT units up to 100. We feel that our dollar-saving experience with GT's is worth passing on to others."

World's Largest Builders of Truck-Trailers

**FRUEHAUF TRAILER COMPANY**  
Detroit 32, Michigan



## HERE'S THE ONLY COMPLETE TANDEM GUARANTEE IN THE INDUSTRY!

**It Includes The Springs!** GT Torsion Bar Springs Are Guaranteed *Unconditionally* For The Trailer's Lifetime!  
*Only Fruehauf* guarantees springs — the *major* item in tandem maintenance cost and tie-up time.

**It Includes The Entire Replacement-Parts And Labor Cost!** For 100,000 Miles, With *No Time Limit*, Any GT Replacement-Parts And Labor Costs Beyond A Total Of \$150 Are Free! This Guarantee Includes Hangers, Shackles, Axle Bracket Assemblies, And Gear Boxes On All New GT55 Units.

*Only Fruehauf* guarantees this maximum expense for *all* parts of its tandem, if regular 90-day Fruehauf check-ups are maintained.

**It Can Apply to Your Present Unit!** When the time comes to overhaul your present GT unit — usually after many, many thousands of profit-producing miles — Fruehauf will modernize it at a very nominal cost and apply this same guarantee — without reservation!

*Only Fruehauf* Offers This Service On *Present* Models.

**Extra GT Savings!** Actually, your GT maintenance will probably amount to just a *small fraction* of the \$150 maximum, if the unit is given regular Fruehauf Service.



## Watch Out for Eye Injuries

Continued from Page 84

treatment by an unskilled layman will make matters much worse.

Sometimes metallic foreign bodies can be removed with the help of a strong magnet, a highly successful method—if it succeeds—but a highly dangerous one also. A small chip of metal from a hammer or chisel may strike the eye at a high speed, and all that may be seen is a tiny streak or track in the cornea. A metallic particle may also have a barb or sharp edge that will do much damage to the eye when it responds to the magnet. Treatment with a magnet usually requires highly specialized care. If there is a chance that the first aid treatment may do more damage—don't take it.

However, let it be stressed again, that the most important thing in all injuries to the eye is immediate attention by a physician. Another point—the eye heals rapidly, and the victim may declare of the injury—"Is OK now." Serious complications may develop from neglect of even the slightest eye injury.

### Minor Eye Troubles

**I**NFLAMMATION of the conjunctiva, the delicate covering of the eye and the inner side of the eye lid is a frequent thing, but one which will need attention. When sand or dust irritate the eye, a condition called conjunctivitis may result. It may be produced also by intense light or glare of the sun.

The first thing the victim feels is an itching and burning sensation, perhaps complains of grit under the eyelids. A sticky secretion is poured from the conjunctiva. In the morning, the edges of the eyelids and eye lashes are glued together, and this is a most typical sign. The eye may become painful and tearful. It is also quite difficult to tell the difference between a mild form of conjunctivitis and other more-serious eye infections. Medical attention is paramount.

Cold compresses may relieve the painful sensation until local treatment is started by the doctor. A shade and dark glasses protect the eye if light causes pain during this condition.

### Arc Flash in Welding

**A**RC FLASH, usually producing a conjunctivitis of both eyes, is caused by excessive exposure to the welder's electric arc. Repairmen and garage employes not directly assigned to welding may be the victims as well as the professional welder. Men who

work near the welder do not think that they need the protection that the welder normally uses. Under no consideration should any person without a face mask or goggles be working nearer than 200 ft from an arc welder.

The symptoms make their appearance 24 hours after the exposure to the arc.

A slight sunburn appearance of the face may develop. The eyes will appear red, the lids swollen, and there may be a profuse production of tears. The complaint of grit in the eyes may also be noticed.

By proper care, all sign will disappear in most cases within 24 hours and almost certainly within 48 hours. Eyes are protected from the infra-red ray of the arc flash only by a ferric oxide lens which filters out the harmful radiation. No other type of glass will do.

END

Please Resume Reading Page 86

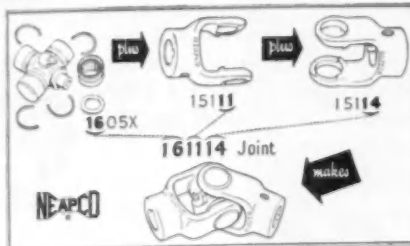
**NOW IT'S EASY-**  
to order exactly the Joint you want  
from the simplified Neapco Catalog!



1500 Series  
Plain Bearing  
  
1600 Series  
Needle Bearing

### SIMPLIFIED NUMBERING SYSTEM

There is a Neapco size for nearly every light duty P.T.O. requirement. Ordering the *right* size is made easy because the number of the complete joint is simply a combination of the numbers of the three major components from which it is assembled. This allows you to make your own combination of length, bore, and type—quickly, accurately.



This diagram shows a typical joint combination—1605X journal assembly plus 15111 end yoke plus 15114 end yoke makes a 161114 Joint. It's that easy!

CATALOG: Not shown in this ad, but included in Catalog PT15B are unwelded center Assemblies and Rectangular Telescoping Center Assemblies. Copy of Catalog free if requested on your business letterhead. It's a valuable book!

**NEAPCO POWER TAKE-OFF JOINTS**  
UNIVERSAL  
NEAPCO PRODUCTS INC · POTTSTOWN, PA

# Aluminum Body Repair is Easy

Continued from Page 78

(till you reach the top of the rivet shaft). Shut off power and work drill bit back and forth and sideways till the head is freed from the shaft.

3. Now that you can see just where the shaft is, drill the shaft out without enlarging the drill hole in either the outer or the inner panel involved.

Some mechanics prefer (after removing rivet head) to chisel the top of

shaft lightly and then to punch the shaft out, using a small punch that will not affect the size of the hole.

Another method used is to chisel the rivet off from the inside (buck side) and then tap out the shaft from the inside. Chiseling from the inside avoids the possibility of damage to the visible outside part of the panel.

In chiseling, use a light and not too

wide steel chisel. Center punching and drilling to head depth, as explained, and then drilling through or punching out the shaft, takes so little time that those who have had experience with welded and bolted construction are surprised at the speed of removing riveted aluminum panels.

## Rivets or Bolts?

**RIVETS** for aluminum body repairs should be of heat-treated aluminum-alloy type A17S-T4 or 53S-T61, and these should be bucked cold. All loose or damaged rivets should be replaced. If the right rivets are not available or if you lack a rivet gun, then the right type of bolts can be used instead of rivets. Be sure to use cadmium-plated bolts, washers and nuts. Bolts should have mushroom-type heads. Rivets should be of the brazier-head type (except where countersunk type is needed).

The rivet shaft diameter should be No. 10. The rivet shaft length should be long enough to allow  $1\frac{1}{2}$  times its diameter to project for bucking. No more than that lest the excess length lead to bulging of the shaft. Since some rivets only pass through two sheets, while others go through three and four thicknesses of metal, an assortment of rivet lengths is necessary.

Riveting equipment is simple and inexpensive:

1. A rivet gun with a brazier head set and a flat head set.
2. A bucking bar or block. Your dolly blocks will probably take care of all needs except the door well.
3. For the door well, a steel block mounted on a long handle, so that you can reach into otherwise inaccessible places.
4. A liberal assortment of No. 10 rivets of heat-treated aluminum-alloy—A17S-T4 or 53S-T61.
5. Lining pins or buttons. If buttons are used, you need button pliers or a button gun for inserting and removing buttons.
6. A supply of No. 10 cadmium-plated bolts, washers and nuts—if rivets are not used.

The clamps you use in your steel body work will come in handy in replacing old panels and in setting new aluminum panels in position for riveting. You will need a supply of size No. 10 lining pins, lining buttons, bolts or metal screws, because you will want to line up the rivet holes of the new panel with the rivet holes in the panel or sections it is to be joined with.

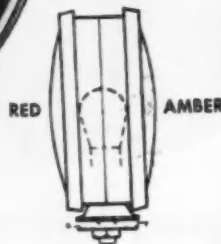
Lining buttons are preferable, because like an expansion bolt they are small in diameter during insertion, but

(TURN TO PAGE 138, PLEASE)



THE *Anthes* LINE

No. 1422  
Double-Face



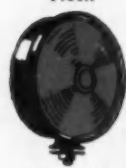
## DO YOURSELF A GOOD TURN!

Equip with Anthes TRUK-TURN signals  
Class A — Type I

You can get the new Anthes TRUK-TURN signals singly or in a variety of set combinations (with manual or self-cancelling switch)—to suit all needs. Like all Anthes Safety Products, these signals are designed and made to deliver dependable Anthes Service for a long time. Brilliant day and night lenses distribute the power of a single bulb—without reflectors. A neat, compact unit. Write for helpful buying information. Anthes Force Oiler Co., Fort Madison, Iowa.



No. 1423  
Flush



No. 1421  
Single Face

*Anthes*

THE FIRST LINE OF SAFETY

... and proud to serve the safest  
drivers on the road!



# DEPENDABLE BRAKE PERFORMANCE

*equals*  
**LOWER  
OPERATING  
COSTS!**

## *use* LONGER LASTING, NON-VAPORIZING, HEAVY-DUTY DELCO SUPER 11 BRAKE FLUID

Fleet owners everywhere depend on Delco Super 11 Hydraulic Brake Fluid because it withstands extreme heat generated in the braking of heavily loaded, fast-moving trucks and buses. With Delco Super 11 there is no vapor lock or immobility. The pedal pressure with Delco Super 11 remains constant throughout a temperature range of 325°F above to 60 below zero. In addition, Delco Super 11 will not harm rubber or metal parts at extreme high temperatures and remains stable through excessive temperature changes. Delco Super 11—the brake fluid that exceeds all S.A.E. standards—is the brake fluid to use in your trucks or buses.



## *avoid costly breakdowns* USE ONLY

### ORIGINAL EQUIPMENT DELCO BRAKE REPAIR KITS



Wise Fleet Owners have solved their brake service problems with time-saving Delco Repair Kits. All necessary parts are included in the Delco Master Cylinder Repair Kits and the Delco Wheel Cylinder Repair Kits. More and more fleets are using Delco Brake Repair Kits for dependable repairs. Kits are supplied in sealed containers.

### YOUR DELCO BRAKE WHOLESALE CAN HELP YOU

Your Delco brake wholesaler and his staff are men of importance backed by long and valuable experience in the brake business. He has many fine services to offer you. Consult him and take advantage of his long and efficient vehicle operation and maintenance experience.

### DELCO BRAKE

A GENERAL MOTORS PRODUCT



A UNITED MOTORS LINE

**DISTRIBUTED BY WHOLESALERS EVERYWHERE**

### YOU CAN RELY ON ALL UNITED MOTORS LINES FOR LOW OPERATING COSTS

- DELCO Batteries
- AC GAUGES, Speedometers and Rebuilt Fuel Pumps
- SAGINAW Jacks
- MORaine Engine Bearings
- DELCO Radio Parts
- ROCHESTER Cigar Lighters
- HYATT Roller Bearings
- INLITE Brake Lining
- HARRISON Heaters
- GUIDE Lamps
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- NEW DEPARTURE Ball Bearings
- DELCO Shock Absorbers
- MORaine Gasoline Filters
- HARRISON Thermostats
- DELCO-REMY Starting, Lighting & Ignition
- KLAXON Horns
- HARRISON Radiators
- ROCHESTER Carburetors
- DELCO Hydraulic Brakes



## Body Repair

Continued from Page 136

when inserted they expand to the size of the rivet hole. They require a button gun or button pliers to contract them before insertion and then to remove them.

Next to buttons, lining pins are best because their length makes them easy to handle. Stove bolts or even metal screws will do for lining purposes, but

are not as easily handled as buttons or pins.

### Aluminum Patching

FOR damaged panels or parts that require patching, use 24S-T6 or 61S-T6 aluminum-alloy sheets, or equivalent, the same thicknesses as the damaged panels.

Do not use steel or other dissimilar metals in place of aluminum alloy. Use either an electric hand shearer or an electric drill with routing bit to remove damaged area. Before shearing or rout-

ing, mark out a square or rectangle around the damaged area as a guide. This will facilitate making a patch of the exact size required.

Make a backing-up plate larger than the repair opening in the panel. Bevel the edges of the backing plate. Then make patch plate the exact size of the actual opening, lightly filing edges to assure an exact fit of the patch.

Next, apply caulking  $\frac{1}{2}$ -in. wide, on inside of the old panel around the patch opening to make it watertight. Center the backing up plate behind the patch-opening and rivet the old panel to the backing-up plate with flathead, countersunk rivets.

Then place the patch in the panel opening, drill through patch and backing plate with No. 10 bit and insert lining or buttons in several drill holes. Next, countersink the patch drill holes and then rivet patch to the backing plate. Fill the hair-line space around the patch with body putty before painting. If you are using unpainted aluminum bodies, touch up putty filler with aluminum or silver paint.

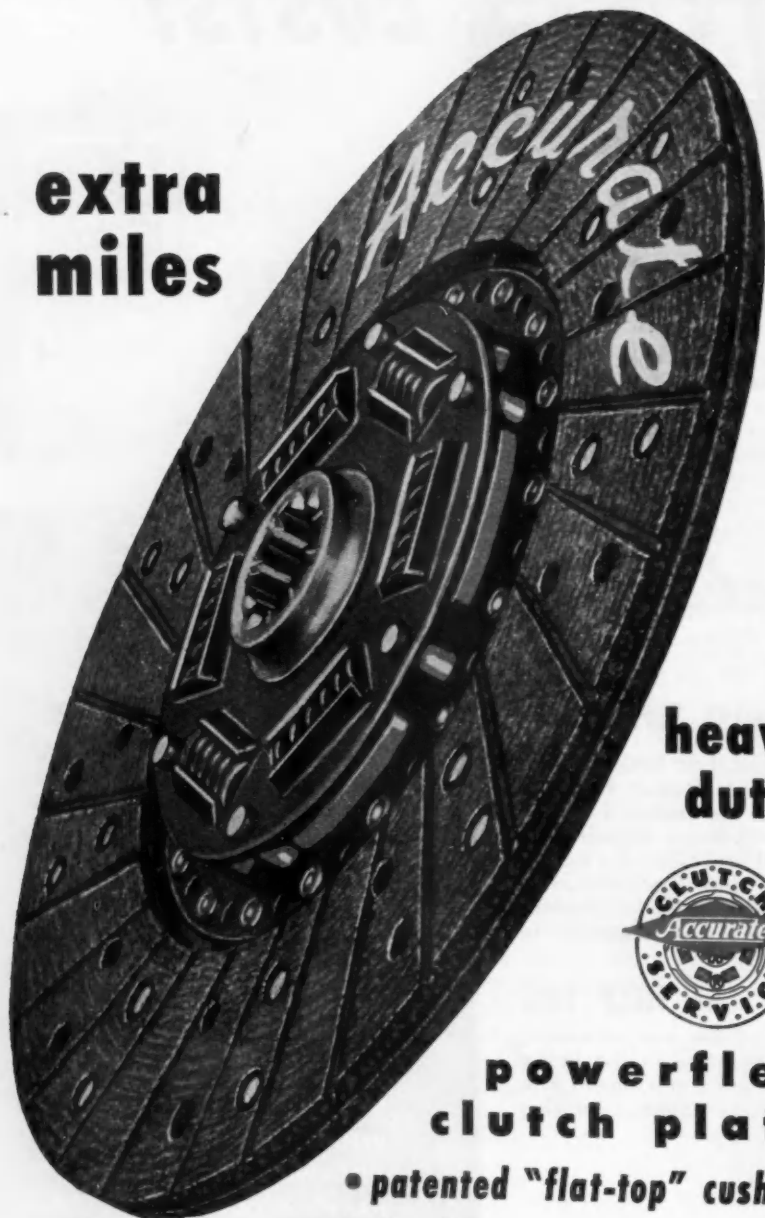
It is also feasible to rivet the patch to both the old panel and the backing-up plate in one operation by having the backing-up plate and the patch held in correct positions and then seam riveting them. In seam riveting, center the No. 10 drill holes on the seam between the patch and the old panel. Insert lining buttons or temporary bolts enough to hold the three pieces together, while countersinking and riveting the others. In countersinking, limit its depth to the thickness of the patch and the old panel—do not countersink deep enough to penetrate the backing-up plate.

When countersinking of rivets is necessary, the procedure is similar to steel. Use suitable size countersinking bit and make sure of centering the point at the start of the countersinking.

### Welding Aluminum

ANYONE familiar with welding steel can learn to weld aluminum. Obtain aluminum-alloy welding rods containing 5 per cent silicon. This reduces (TURN TO PAGE 142, PLEASE)

**extra  
miles**



**heavy  
duty**

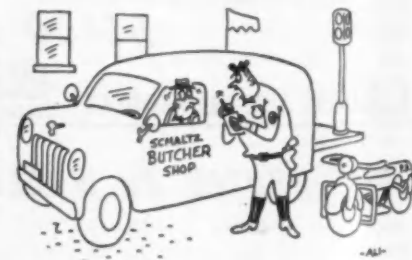


**powerflex  
clutch plate**

- patented "flat-top" cushion
- triple-duty spring supports
- exclusive self-aligning hub splines



**Accurate PARTS MFG. CO.** 12435 Euclid Avenue  
CLEVELAND 6, OHIO



"Remember that tough steak you slipped my wife yesterday?"

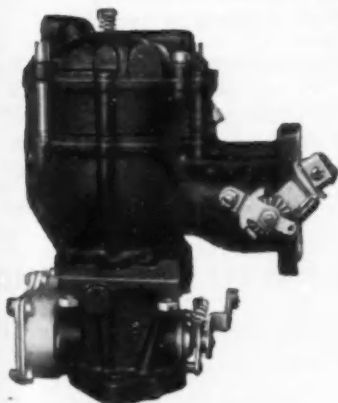
Will he Buy Your Truck Next Time?



IT ALL DEPENDS  
ON PERFORMANCE  
and  
PERFORMANCE  
DEPENDS ON

# Zenith

## CARBURETORS



No manufacturer could long exist in the competitive commercial vehicle field without drawing heavily on previous owners for new vehicle sales. It is perfectly obvious, no owner would buy the same make vehicle again and again unless it has delivered satisfactory performance. Therefore, it is just good business to see that every component contributes its share toward building owner loyalty. That's why manufacturers whose vehicles are Zenith\* equipped measure carburetion costs in lasting terms rather than initial expense. In the field of heavy-duty carburetion, one name, Zenith, has stood for lasting satisfactory performance for over a quarter of a century. Zenith's rugged construction, strong idling, freedom from stalling and response to every demand make it the engineers' choice. For good will, it's good business to specify the best—Zenith for lasting performance.

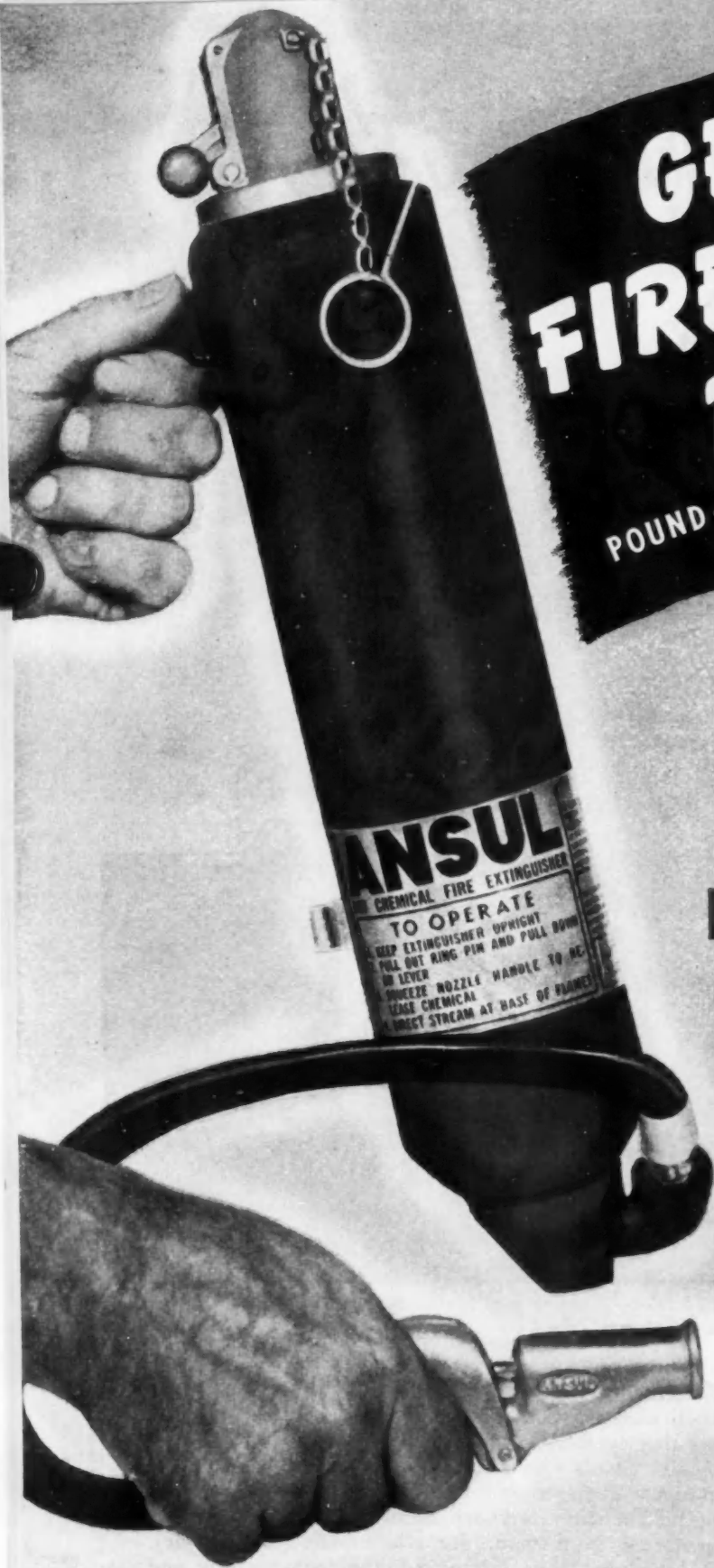
\*REG. U.S. PAT. OFF.

ZENITH CARBURETOR DIVISION OF

696 Hart Avenue • Detroit 14, Michigan

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.





# GET MORE FIRE-STOPPING POWER...

POUND · FOR · POUND · DOLLAR · FOR · DOLLAR

...WITH

## ANSUL

DRY CHEMICAL

## FIRE EXTINGUISHERS

New I.C.C. safety regulations recognize the need for larger, more effective fire extinguishers for trucks and busses. On December 31, 1952, it is mandatory for each vehicle operating under I.C.C. regulations to carry at least one 1½ quart vaporizing liquid (carbon-tetrachloride), one 4 lb. carbon dioxide or one 4 lb. dry chemical fire extinguisher.

With Ansul Dry Chemical Fire Extinguishers you get the greatest fire-stopping power ever available in hand portable fire extinguishers. (See Comparative Effectiveness Ratings—opposite page.)

You also are assured of many years of dependable, trouble-free fire protection. Ansul Extinguishers have been field tested through the years by hundreds of satisfied customers in the motor truck and motor bus industry.

Sturdy vehicular mounting brackets are available for all models. These brackets as well as the extinguishers themselves can withstand much more vibration than encountered in the roughest type of motor truck operation.

Ansul Dry Chemical Fire Extinguishers are easy to operate. The patented nozzle provides a stream pattern which makes possible skilled performance by unskilled operators.

Ansul "PLUS-FIFTY" Dry Chemical is safe to use. It is non-toxic, non-abrasive, non-corrosive and a non-conductor of electricity. And safety for the operator is a major consideration in the design of all Ansul Fire Extinguishers. In fact, every part of each hand extinguisher model will withstand over 5 times the working pressure expected in the operation of Ansul Extinguishers.

### SOME ANSUL SERVICES AND PLUS VALUES

- More Fire-Stopping Power — Pound for Pound... Dollar for Dollar.
- Properly designed equipment field tested for dependable service by thousands of satisfied customers.
- Longer life of extinguisher with lower maintenance costs.
- Fire fighting instruction programs for your drivers and shop personnel at no charge.
- A written 5 Year Warranty with each extinguisher.

FIRE

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# ANSUL DRY CHEMICAL FIRE EXTINGUISHERS

... ARE YOUR BEST PROTECTION FOR  
FLAMMABLE LIQUID, ELECTRICAL,  
BRAKE, TIRE AND CARGO FIRES.

Ansul Extinguishers give you the ultimate in fire protection at moderate cost. Many common carriers have been using Ansul Extinguishers for years. For example, nearly every Greyhound bus is protected by the 20 lb. capacity Ansul Extinguisher. Propane powered busses recently purchased by the Chicago Motor Coach Company each carry an Ansul Model 4-B Extinguisher.

Thousands of trucks operated by hundreds of oil companies and common carriers are protected against fire disaster with Ansul Fire Extinguishing Equipment. Most of the Diesel locomotives operated by the nation's railroads also have one or more Ansul Extinguishers as their first line of fire defense.

Even state police cars in many states carry Ansul Extinguishers to most effectively give fire fighting assistance in cases of fire accidents.

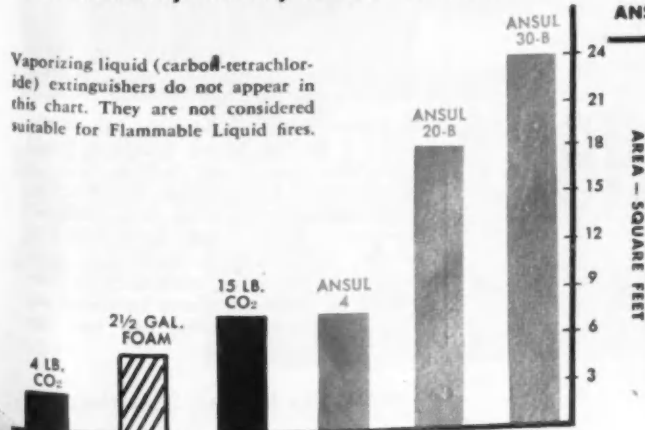
The long life and low maintenance costs of Ansul Extinguishers make them truly economical fire protection for fleet operators. This fact combined with their greater fire stopping power makes Ansul Extinguishers ideal fire protection for truck and bus operations.



Get the facts. Send for File No. 963. You will receive complete information on Ansul Services and Plus Values. Detailed descriptions of all Ansul models are included in the catalog you will receive.

## COMPARATIVE EFFECTIVENESS RATINGS Determined by Factory Mutual Laboratories

Vaporizing liquid (carbon tetrachloride) extinguishers do not appear in this chart. They are not considered suitable for Flammable Liquid fires.

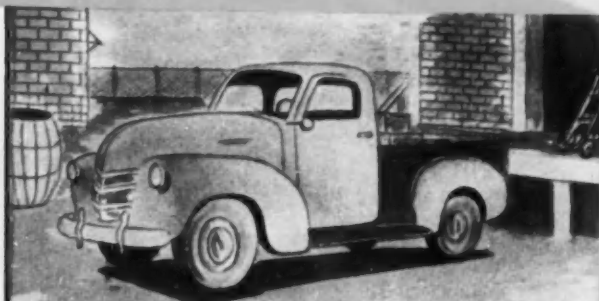


Areas shown are maximum areas of open tanks of gasoline to be protected by one extinguisher according to recommendations of the Factory Mutual Laboratories.

LOCAL PICK-UP



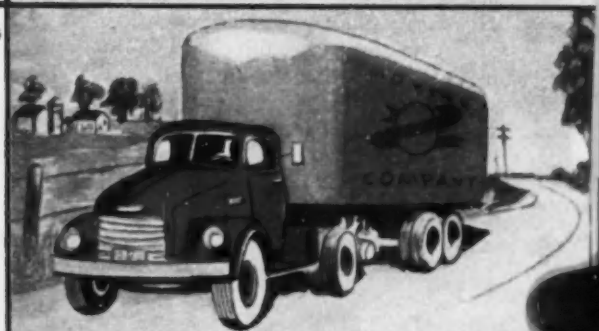
ANSUL MODEL 4



LONG DISTANCE HAULING



ANSUL MODEL 4-B



PETROLEUM TRANSPORT



ANSUL MODEL 30-B



CITY BUS



ANSUL MODEL 4-B



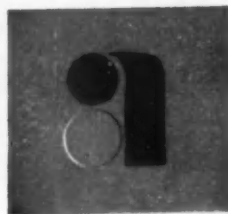
OVERLAND BUS



ANSUL MODEL 20-B



Illustrated above are various types of vehicles along with the size extinguisher commonly used to protect the hazard involved.



**ANSUL**  
*Chemical Company*

FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN

OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES  
ALSO MANUFACTURERS OF INDUSTRIAL CHEMICALS, REFRIGERANTS AND REFRIGERATION PRODUCTS

## Body Repair

Continued from Page 138

the melting point of the rod 200 deg below the melting point of the panel. Use aluminum easy-flow flux. Mix powder in accordance with manufacturers' directions, using a small jar about four or five in. deep and three or four in. in diameter. Fill about one half full with flux mixture and stand welding rods in jar. It is good practice to have

a 1/2-in. paint brush in flux jar to use in making sure that the flux is well applied to the rod before using. Then proceed with torch and rod to weld up the crack in the panel, just as in the case of steel welding, except that you can do a much neater job with aluminum and one that will require less finishing off afterwards.

The torch should be carefully adjusted to show a neutral or slightly reducing flame, since this gives the best speed and economy as well as a clean, sound weld.

With an acetylene torch, reduce

amount of acetylene until only one white cone of maximum length is visible. Outside of this cone is a nearly colorless flame of large volume. To adjust welding flame to neutral, increase acetylene 'til two cones appear, and then decrease it until only one cone is visible. Be sure that torch tip is free from flux contamination.

It is desirable to heat the aluminum only once—in one pass. In other words, stick to a spot till you have finished, rather than skip around the repair area. Also keep dipping the rod in the flux or changing to another rod that has been standing in flux jar.

If welding aluminum for the first time, practice welding pieces of aluminum scrap together, to acquire the knack of doing the welding smoothly in one pass.

### Test the Fit of Panels

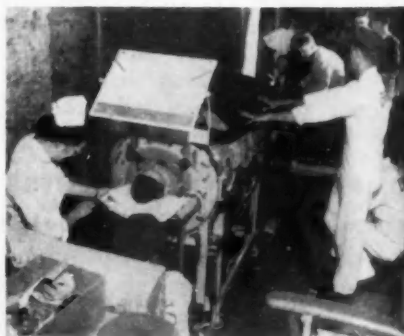
**R**EPLACEMENT panels are identical with the panels originally used on your trucks. But the alignment of your old panels may have been affected by collision impact. Therefore, in replacing an old panel with a new one, check the fit all around to make sure it is perfect before you start riveting. If it is very slightly out, file the edges lightly till it fits the adjoining panels snugly. Use clamps and lining pins or buttons to hold it in place while you check the fit.

### Waterproofing and Dustproofing

**I**N the manufacture of aluminum bodies, a waterproofer and dustproofer is used at the seams. It also can be used as insulation to prevent

(TURN TO PAGE 144, PLEASE)

### Going to Work?



Dr. Ross Winkler recently joined the staff of the Highland Hospital, Oakland, Cal., aided by Bekins Van & Storage Co. A polio victim, Dr. Winkler complete with his iron lung "office" was moved from Fresno to Oakland in one of Bekins' newest vans and a special crew. The lung was kept in operation by a 110-v generator mounted on the saddle between the cab and the van.



## CLAW TIRE CHAINS

... "traction insurance" specified  
by the biggest operators

The bigger the fleet the sharper the eye kept on road schedules and operating costs. Fleet operators with plenty of experience in buying and using tire chains tell us CLAWs not only keep their cars and trucks moving in "rough" weather, but they also stand up under the continual pavement-pounding.

For winter weather traction insurance at low cost per mile, equip all vehicles now with CLAW Tire Chains.

**CLAW** Tire Chains are made in all sizes to fit all automobiles, trucks and busses. Singles and duals. All feature the easy-on "finger pressure" Blue Boy fasteners.

# COLUMBUS McKINNON

## CHAIN CORPORATION

General Offices and Factories: TONAWANDA, NEW YORK

Plants at Angola, N. Y.; Dixon, Ill.; St. Catharines, Ont., Can.; Johannesburg, South Africa

until only one  
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tember, 1952

## The happy little Eskimo has **POWER STEERING** ...why not modern trucks?



*"The happy little Eskimo,  
He rides upon his sled.  
His dogs outstrip the winds that blow  
Across the gleaming ice and snow  
Beneath the northern lights that glow  
Like silver overhead."*

Words of song by Frederick Manley,  
© Silver Burdett Co., by permission.

As the dog team rushes the sled along, the animals furnish the power for steering. The Eskimo just shouts the arctic equivalent of "gee" or "haw" and the dogs turn the sled accordingly. The Eskimo doesn't have to wrench a steering wheel.

Even when "gleaming ice and snow" are with us, we don't use sleds for transport. But in eliminating primitive haulage, we have lost the power steering. The far heavier manual steering load is on the arm, shoulder and back muscles of the driver. The resulting fatigue causes him to slow down, become less efficient, more prone to accidents.

Vickers Hydraulic Power Steering makes the heaviest vehicle safe and almost effortless to steer . . . even under

the most adverse conditions (ruts, soft shoulders, obstructions, flat tires, off-road, etc.). A light finger touch on the wheel is enough . . . steering is no longer a source of driver fatigue. Drivers remain fresh, efficient, safe.

Get further information on Vickers Hydraulic Power Steering; ask for Bulletin M-5100.

**VICKERS** Incorporated

DIVISION OF THE SPERRY CORPORATION

1418 OAKMAN BLVD. • DETROIT 32, MICH.

Application Engineering Offices: ATLANTA • CHICAGO (Metropolitan)  
CINCINNATI • CLEVELAND • DETROIT • HOUSTON • LOS ANGELES (Metropolitan)  
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ROCKFORD • ST. LOUIS • SEATTLE • TULSA • WASHINGTON • WORCESTER



4878

**VICKERS** hydraulic  
**POWER STEERING**  
Is Effortless, Positive and Shockless





## Body Repair

Continued from Page 142

contact of steel or iron racks with aluminum panels to avoid electrolysis.

This compound can be applied with a putty knife or a caulking gun with a 1/2-in. wide nozzle.

After fitting a new panel in place, remove it and apply new caulking at all seams where it was used before (first removing any of the old caulking that

may have adhered to the old panels). The use of caulking is important for two reasons: First, it seals the seams water and dust tight. Second, it retains its pliability indefinitely which means it protects the seams indefinitely.

### Painting Aluminum

CLEAN entire body surface with common lacquer thinner. Gunk body and dry wash body thoroughly with a metal prep. Wash off with clean water. Dry body carefully. Then prime with coat suited to finish coat, as per paint manufacturer's directions. Dry prime

coat 24 hours and sand lightly with No. 320 wet-dry paper. Tack off body with tack rag. Then apply two coats of enamel or four coats of lacquer, as directed by paint manufacturer.

If priming coat is of zinc chromate, check with your paint supplier to make sure your finish coat is suited for use with zinc chromate.

Truck bodies are exposed to road grit, oil and film; to acids in the air and in solutions used during snow and ice conditions; also to acids and moisture tracked in by drivers.

Aluminum underbodies are thickly coated with bitumastic paint. This should be inspected periodically in line with the wheel wash. If the coating is blasted off, it should be re-coated with bitumastic.

Crevice between the side step and the outer skin (or strip) should be cleaned of all dirt and kept filled with bitumastic paint, to prevent acid attacks on the metal.

END

Please Resume Reading Page 80

## TIRE HEAT PROBLEM?

Insure Airtight Tire Valves

USE...

**HI-TEMP** Heat Resisting  
VALVE INSIDES AND CAPS  
Developed by **DILL**

No. 100-AH  
Valve inside with special heat-resisting rubber in cup and on barrel.



No. 632  
Dome-type cap with swivel gasket of special heat-resisting rubber.



No. 631  
Hexagon-type cap with lead gasket mounted over brass sleeve.



Stop costly road delays caused by tire trouble. Under abnormal hot tire temperatures, even up to 300°F and more, Dill HI-TEMP valve insides and caps keep tire valves airtight. High temperatures will not injure the special Dill heat-resisting air seal. Dill HI-TEMPs are helping fleet owners, everywhere, to maintain schedules and save tire wear. Be sure to get this money-saving equipment, today, from your wholesaler, tire or oil company.

**THE DILL MANUFACTURING COMPANY**  
700 East 82nd St., Cleveland 3, Ohio

### HANDY SERVICE TOOLS FOR TRUCK AND BUS TIRES

This handy kit of long-handled tools will save time for your tire serviceman. Each tool is specially designed (approx. 8 1/2" long) to reach inner dual tires for removing and replacing valve insides and making necessary repairs on valve stems. The complete set comes in a leather pouch with snap button lock, and fits handily in pants, coat or jacket pocket.



No. 3200 TOOL SET in Handy Leather Pouch Includes These Tools  
No. 3201 Valve Inside Insertor and Extractor  
No. 3202 Valve Cap Tool  
No. 3203 Valve Inside "Easy-Out"  
No. 3204 Valve Stem Refacer  
No. 3205 Valve Stem Seat Cleaner  
No. 3206 Valve Stem Rethreader

ORDER from your Wholesaler, Tire or Oil Company

**DILL**  
Standard of the Tire Industry

TIRE VALVES AND ACCESSORIES

## New White Model

A NEW White "payload" tractor, model WC-24PLT, has just been announced by the White Motor Co., Cleveland, Ohio. This new tractor has a higher horsepower engine, new weight-saving design and a 102-in. dimension from bumper to back of cab.

The new model is powered by a 180 hp White engine. Design changes in



the engine include use of stellite-faced inlet valves, an entirely new exhaust system with dual exhaust and dual inlet to exhaust muffler, increasing horsepower, improving valve and manifold life and continuing gasoline economy.

Weight of the tractor ready for the road is under 10,500 lb, including 100 gallons of gasoline, cab, 10.00 x 20 tires on spoke wheels and fifth wheel. The model WC-24PLT is available with 140, 146 and 158 in. wheelbases. It is also available in the same wheelbases with standard two-speed axles.

The tractor provides for a bridge formula front axle location with 28 in. from front of bumper to center of front axle, permitting maximum loading in formula states.

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## NYLON CORDS PROTECT AGAINST ALL THESE CAUSES OF TIRE FAILURE

**HEAT**—Nylon cords can withstand hotter temperatures than a tire will ever encounter on the highway in normal operations.

**FLEX FATIGUE**—Nylon's resilient strength makes tire cord stand up under the complex compression-tension flexing that takes place every time a tire turns—reduces flex-fatigue failures.

**BRUISE DAMAGE**—Nylon's toughness virtually ends cord ruptures caused by tires hitting curbs and holes at high speeds.

## "On rocky Tennessee mountain roads no blowouts with **nylon cord tires** in 30,000 miles"

"I own one truck—6 rolling wheels—hauling limestone, coal and fertilizer in the Tennessee mountains," says George Donelson, Grossville, Tennessee. "I used to average only about 12,000 miles before getting a blowout—and sometimes got as little as 300 miles. Since I changed over to nylon cord tires, I've gone over 30,000 miles without a blowout, and the tires look like there's a lot more life in them. In 18 years in the trucking business, I've never seen a tire that can match the performance of these nylon cords. From now on, I wouldn't buy any other kind."

Whether your fleet is large or small, you can make this test. Try a set of nylon cord tires on your toughest haul, for your heaviest loads. See how they reduce your

road delays and carcass failures . . . give a higher percentage of successful recaps and a lower cost per mile. Ask your dealer about nylon cord tires today. (Du Pont makes nylon fibers, does not produce tires. A number of rubber companies have nylon cord tires available.)

**FREE BOOKLET** on nylon tires—write for your copy.  
Textile Fibers, Dept. C-4, E. I. du Pont de Nemours &  
Co. (Inc.), Wilmington 98, Delaware.



150th Anniversary

BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

COMMERCIAL CAR JOURNAL, September, 1952

# Evolution of a Bulk Grain Hauler

Continued from Page 82

With no pattern to use as a guide, it was strictly a devise-as-you-go operation.

The first truck body was made of wood which quickly proved unsuitable to take the punishment of its heavy duties. The next two truck bodies were of steel, sturdy enough, but it soon became apparent that the weight of the truck in relation to the payload carried

made this type impractical. The truck body with capacity for an 8-ton payload weighed 4300 lb when made of steel.

Work continued to develop a design suitable for trucks and trailers hauling bulk dairy feed. Next a semi-trailer with a steel frame and an aluminum body was built. The aluminum cut down the weight, yet proved strong and durable enough to withstand the trips

south to San Diego and north to Merced. By comparison, an aluminum truck body for an 8-ton payload weighed only 2500 lb.

Finally, an entire semi-trailer of aluminum, including the frame, withstood the stress of the load and proved to be the answer.

Several design modifications later, blueprints of these designs were turned over to the Aluminum Body Works in Los Angeles. Since then, this company has manufactured all the truck bodies and semi-trailers for the Triangle Grain Co.

## Unloading Problems

AT the same time the Triangle partners were struggling to perfect the truck best suited for hauling bulk feed, another problem kept recurring. The feed handled by the trucks must be unloaded where the customer stored it, whether in a bin on the ground floor or in the second story of his barn.

The suction type blower was of no value in this case because this method of unloading only served to separate the different ingredients of the carefully mixed feed.

After much study and experimentation the principal of the screw conveyor was applied. The drag, belt and screw method moved the feed from the truck to the dairyman's receiving area. A 10 hp hydraulic motor and elevator with screw conveyor and swing spout made it possible to unload from the side or the rear of the truck, either at the ground floor level, or up to the hayloft of the barn.

From an experimental beginning in 1944, a fleet of 41 pieces of equipment, trucks and trailers, is now in operation around the clock. The small 8-ton capacity truck bodies in aluminum are being replaced with 10-wheel trucks and aluminum bodies with payloads of 14 tons. These trucks and trailers play an invaluable part in meeting the ever-increasing demands for delivery of bulk feed in large quantities.

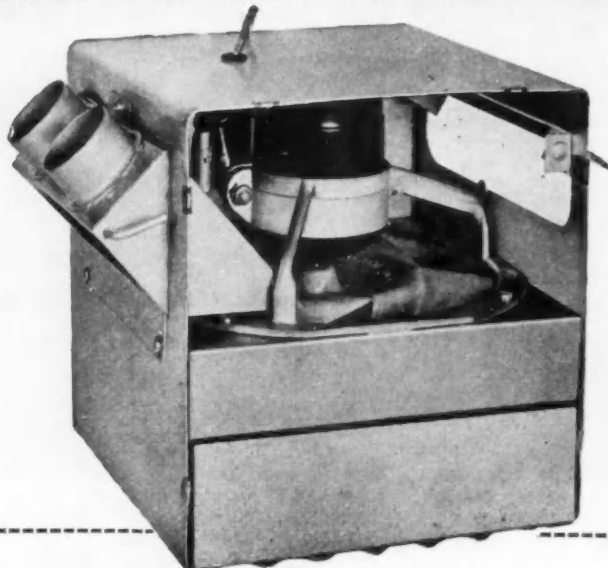
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Please Resume Reading Page 84



"If I knew you were coming, I'd have baked a cake."

## JUST TAKE OFF THE COVER... AND IT'S WIDE OPEN FOR INSPECTION OR SERVICE



## EVANS ACCESSIBILITY OF DESIGN SAVES TIME, TEMPER AND MONEY

No midget mechanics needed here! Just take off the cover of a husky Evans heater-defroster and everything you'll ever need to get at is right at your fingertips... big threaded water connections... and a stiff, strong fan you can work around without bending or knocking out of balance! These are only a few of the Evans *quality* features that save money season after season. Evans heating and ventilating equipment is custom engineered for top performance by Evans Products Company, Heating & Ventilating Division, Dept. Q-79, Plymouth, Mich.

## UNBREAKABLE LIGHTWEIGHT FAN



with precision die molded airfoil section-blades moves maximum air with least noise and power consumption. Sturdy one-piece construction; nothing to loosen or get out of balance.

**EVANS** CUSTOM HEATING AND VENTILATING  
FOR A WORKING WORLD ON WHEELS





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September, 1952

## CHECK THESE IMPORTANT FEATURES WHEN YOU BUY PORTABLE HYDRAULICS

### ✓ QUICK, EASY "POSITIONING"



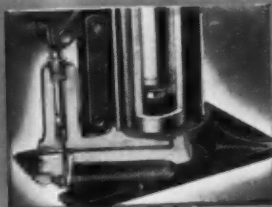
Walker "Series 900's" are designed to take an upright position automatically when lifted by the handle. The strong, malleable iron handle socket is located in the center of the jack and above the center of gravity. This famous Walker "Pendulum Balance" saves time and tempers when positioning the jack.

### ✓ EXTRA RESISTANCE TO BENDING



To resist eccentric loads at top height, the lower end of the lifting ram in Walker "Series 900" is solid steel—not hollow as in some jacks. The Walker "Solid End" ram gives extra strength where extra strength is needed most—strength to resist the bending force from inevitable side thrusts.

### ✓ SMOOTH, DEPENDABLE LIFTING POWER



Efficient performance in any hydraulic jack depends upon internal valve action. In Walker "Series 900," suction and discharge valves work in perfect synchronization, at lightning speed. Closing action is always positive. This "Ryth-matic" valve action assures efficient, dependable operation.

### ✓ LEAK-TIGHT HOLDING POWER



A jack must not only lift... it must also hold. If the alignment and fit of its parts is sloppy, jack fluid is bound to escape under the terrific operating pressures. In Walker "Series 900" vital parts are precision-machined to tolerances so close that load-holding ability is always assured.

# You get them all with... WALKER SERIES 900 PORTABLE HYDRAULIC JACKS



6 Models from 1½ to  
20 Tons Capacity

2 Super-Power Jacks  
30 and 50 Tons Capacity



WALKER MANUFACTURING CO. OF WISCONSIN  
Racine, Wisconsin

Walker Jacks, Lifts  
Exhaust Silencers, Oil Filters

COMMERCIAL CAR JOURNAL, September, 1952

# Abbotts Delivery Body

Continued from Page 59

point of interior modification. The sides and floors of this body have 2-in. insulation, and the inside is sealed off with sheet steel. Because of the expense involved, back doors are not insulated, but a 4-in. shelf is built across the inside of both rear doors to seal off the compartment between the cases and the door panels. Thus, ice no longer enters

this area and body sweating has been eliminated. Nibs welded on the floor at the rear keep cases from sliding into the door panels.

The old, smooth floor was replaced with a waffle plate, all-welded, water-tight pan construction which fills in all seams and spaces, eliminating moisture and deterioration of the metal. Waffle

type flooring also remains clean longer. Drain holes are placed in each corner. Four pipes, 1 1/4 x 12 in. permit water to escape to the ground. In sealing off the area at the back, the body was brought straight up, boxing in the area that was not useful anyway. Thus cases can be piled directly on top of each other and no payload space is wasted. This vehicle can carry 92 cases. Weight addition is not a factor since the truck has a G.V.W. of 9000 lb and filled to capacity for route delivery, it still remains considerably under that.

Another innovation is in the guard rails for the front of the cargo. Specially designed rails can be placed across the load in three locations to hold cases in place. When not in use, these rails are stored in a special rack at the lower section of the driver's compartment.

The streamlined interior has also effected considerable savings in cleaning. Rough surfaces previously wore out brushes too quickly, and reinforcing angle iron strips, bolted construction and unsealed areas left spaces which encouraged bacteria. Now products are well protected under these more sanitary conditions and the time saved in cleaning has in itself been a major factor in offsetting the cost of such a modification.

Cost of this modification of a standard Divco delivery body, with power doors, insulated construction, and such modifications as have been outlined above runs approximately \$500. However, we feel that in volume production this can be reduced appreciably, possibly to around \$300.

END

Please Resume Reading Page 60

## Mobile Hospital Unit



This Chevrolet chassis mounted, mobile hospital unit is designed for prompt dispatch to the scene in the event of a major disaster. The body has sound-proof ceiling and walls and is air conditioned. A separate engine provides power for the latter and the inside body lights. Equipment includes two fixed and one portable lung, a complete galley with electric refrigerator, two-burner electric stove, sink with hot and cold running water, and storage space for surgical dressings.



## Here's Why STAR Body Solder Is THE Body Solder

STAR's 5 points permit quick, even melting. It's the solder that's easiest to melt.

STAR's 5 hollows give perfect grip. It's the solder that's easiest to handle.

STAR's 5 ridges and valleys make the molten solder easy to control; prevent run-off of costly metal. It's the solder that's easiest to work.

Federated STAR Body Solder is the outstanding bar solder because its shape, its composition, and its uniformity make it easier for you to do a better job... to make bigger profits.

Use Federated STAR Body Solder. Your local jobber carries it in stock.

*Federated Metals Division*



AMERICAN SMELTING AND REFINING COMPANY • 120 BROADWAY, NEW YORK 5, N. Y.

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## the war that never ends

The battle to transform generated power into the highest measure of applied traction is unending in the automotive industry. In this project, Spicer for 48 years has invented, developed and perfected power transmission units that have delivered outstanding performance in peace and war. We are dedicated to the service of the nation...helping to assure better, lower-cost transportation in the automobile, truck, bus, tractor, railway and airplane fields.





# Spicer

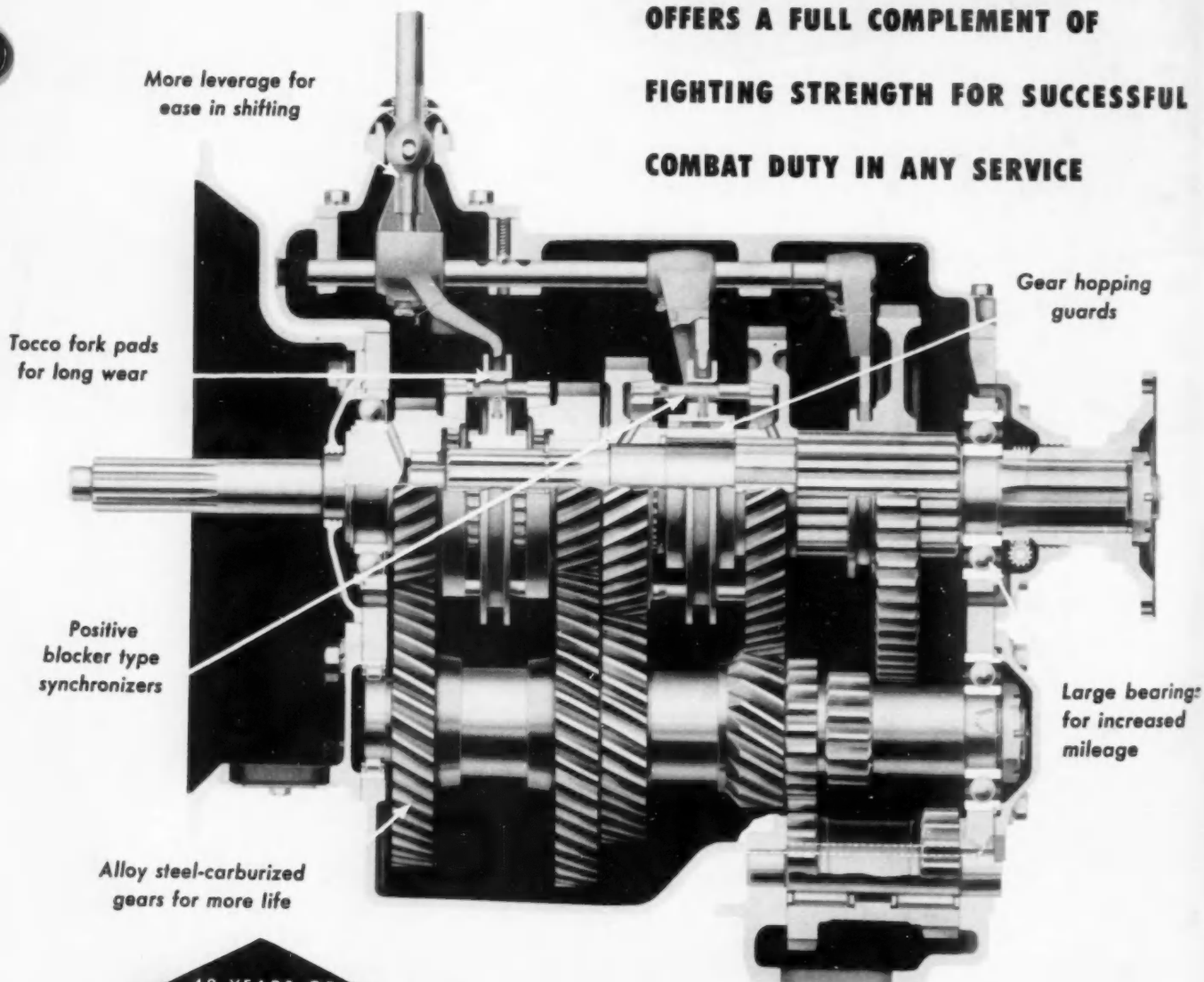
SPECIALISTS IN SERVICE

Equal shifts for  
driver convenience



## The Spicer Brown-Lipe Fully-Synchronized Transmission

OFFERS A FULL COMPLEMENT OF  
FIGHTING STRENGTH FOR SUCCESSFUL  
COMBAT DUTY IN ANY SERVICE



**SPICER MANUFACTURING**  
Division of Dana Corporation • TOLEDO 1, OHIO

TRANSMISSIONS • UNIVERSAL JOINTS • BROWN-LIPE AND AUBURN CLUTCHES • FORGINGS • PASSENGER CAR AXLES • STAMPINGS • SPICER "BROWN-LIPE"  
GEAR BOXES • PARISH FRAMES • TORQUE CONVERTERS • POWER TAKE-OFFS • POWER TAKE-OFF JOINTS • RAIL CAR DRIVES • RAILWAY GENERATOR DRIVES

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## Fleet Saves \$3300 On Flooring Jobs

THE DART Transit Co. of St. Paul, Minn., reports a saving of more than \$3,300 a year on the installation of trailer floors through use of an electric impact tool. Savings on the first two jobs paid the cost of the tool.

Dart is a 15-year-old trucking firm operating nine tractors and 25 trailers of its own as well as 20 pieces of leased equipment. This contract carrier runs regular ICC routes in Illinois, Indiana, Wisconsin, Iowa, North Dakota, South Dakota, Minnesota, Oklahoma, Nebraska and Missouri. With exempt commodities, the company's vehicles go all the way to the East Coast.



Here, tool is used to remove damaged sections of trailer exterior



Removal of battered plywood interiors of insulated trailers and installation of new plywood was cut from 20 man-hours to 6 man-hours

Heavy miscellaneous cargo is hard on trailer interiors, particularly on floors, and Dart found maintenance a

considerable expense. The company uses strips of oak,  $\frac{3}{4}$  in. thick, screwed to the  $1\frac{1}{4}$  in. oak base. To cover the big trailer floor, 32 ft long and 7 ft 9 in.

wide, it is necessary to use five gross of  $1\frac{3}{4}$  in. No. 12 steel screws. Removing the old flooring by hand was a long, tough job taking two men 12 full hours. Virtually all the screws were ruined and many had to be chiseled off. Putting in the new oak strips was another 10-hour job for two men.

To speed up the work, operations manager John Nicholson put in a Model 4U Ingersoll-Rand electric impact tool. The two-man team can now rip out an old floor in six hours. On installation of the new floor, one man can drive the

(TURN TO PAGE 154, PLEASE)



# STOP MEANDERING Deliveries

... MONEY DOWN THE DRAIN

Route your trucks the shortest way every trip. The time and gas used by your drivers looking for unknown streets, driving all around Robinson's barn to make deliveries, will buy a hundred maps like Hearne's Street Map of your city and county area.

Street names are in big, black type, and instantly spotted with Hearne's patented, automatic Street Finder. And every map is mechanically indexed.

Over 100,000 truck owners use Hearne maps every day to give customers better service and cut truck mileage. Many users claim they save the cost of the map in a single day's use.

### YOUR CITY MAP FOR 10-DAY FREE TRIAL

Send for cloth, cellophane-finished 44" x 65" map now. Stop delivery waste. Mark routes in crayon we supply. Washes off instantly. Use map for 10 days. Then, if you can get along without it, send it back... or send \$42.50 and it's yours.

### MAIL TODAY OR USE YOUR LETTERHEAD

#### FREE EXAMINATION ORDER FORM

Hearne Brothers (America's Largest Manufacturers of Commercial and School Maps)  
23rd Floor, National Bank Bldg., Detroit 26, Michigan.

Without obligation on my part, send me a map of my city and county area. After 10 days' FREE use in my office I'll return the map or remit \$42.50. Prices on cloth, cellophane, spring rollers, stainless steel and labor are going up! Order today!

Your Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

Zone \_\_\_\_\_

State \_\_\_\_\_

## Fleet Saves . . .

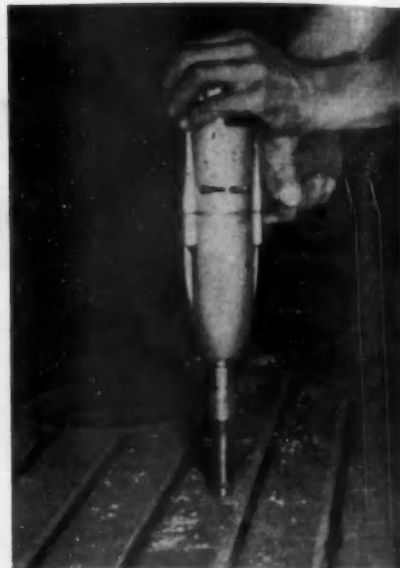
Continued from Page 153

720 screws in three hours. Here's the way the time savings shape up in man-hours:

Job	By Hand	With Tool	Savings
Removing old floor	24	12	12
Installing new floor	20	3	17
Total job	44	15	29

This is a reduction of more than 65 per cent in labor time on a floor replacement. Dart does an average of 30 such jobs a year, which means an annual labor saving of 870 man-hours. With labor at \$3.25 an hour, the annual saving to the company on this single operation amounts to \$2827.50.

Still another factor in the flooring job is the salvaging of screws. With the power tool, a full 50 per cent of the screws come out in good condition and can be reused. Mr. Nicholson calculated the saving at \$18 per floor, a total of \$540 for the year. This brings the



Dart saved \$3,367.50 on replacement of trailer floors in one year by use of Ingersoll-Rand electric "Impactool." Time per trailer was cut from 44 man-hours to just 15 man-hours

total savings on the floor jobs to \$3367.50.

### Business Increases

IN SPITE of the considerable savings involved, the floor replacements represent only 270 hours of work for the tool and it is available for many other jobs. Last year, Dart insulated five trailers, a job that involved removal and replacement of the plywood interior sides.

Previously, it took two men five hours to pull off the sides and about an equal time to get them back. With the impactool, each operation takes one man just three hours. Thus, man-hours per trailer were cut from 20 down to six and time savings on the five trailers totaled 70 hours. Translated into dollars, this meant another \$227.50 dividend for power tool operation.



"Wait 'till he finds out it's the tail end of his own load!"



### HIGHLY IMPROVED, TWO-SPEED STEEL LANDING GEARS

Austin proudly presents a major advancement in Steel Landing Gears, the New Style AUSTIN JH SERIES.

Through important refinements in engineering and design which include the use of finer quality alloy

steels, six-pitch, precision cut, permanently lubricated lift screws with 4" lower legs and a most

efficient built-in two-speed transmission, these new Austin Landing Gears are the lightest, easiest to operate, longest lived and most efficient steel heavy duty units on the market today. Write for complete details today!

**featuring - LIGHTER WEIGHT . . . LOWER PRICE . . . !  
PLUS 20 - 30% GREATER LIFTING CAPACITY!**







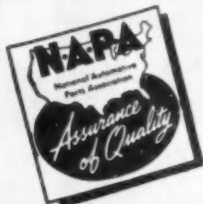
Where in the world, save in America, could this challenge become a familiar part of the language? These four simple words express our spirit of independence, the dignity of the individual, and the self-confidence of free men. Abroad, where "5 Year Plans" and "Collective Systems" control the individual rigidly, "Who Said I Can't?" would be a quick ticket to the salt mines!

Analyze that big statement in four little words a bit. Think of "Who Said I Can't?" in terms of a man's relationship with his boss . . . his neighbor . . . or, in your own day-to-day problems of meeting and overcoming obstacles — handling your job — accomplishing things.

In boom times or bad in this *free* country, real mechanics working with good Hand Tools stand up and challenge with an emphatic "Who Said I Can't?" It's American, brother, and it's still very much yours . . . don't let anyone take that birthright away from you. Let's keep our American system — and work to make it better.



**NOTE TO MECHANICS:** Here are the good Hand Tools of your trade. From slim, powerful Sockets and dependable Flat Wrenches to the ingenious, time-saving, special Tools for automotive work, you'll find New Britain has everything you demand in practical utility plus solid quality. Ask your Jobber to show you this money-making Set No. 6050.



# New Britain

## HAND-TOOLS

**GREATER STRENGTH • BETTER FIT**  
**THE NEW BRITAIN MACHINE CO. • NEW BRITAIN, CONN.**

# INTRODUCING . . .

...A. A. Anderson, former manager of the Highways and Municipal Bureau of the Portland Cement Assn., appointed chief highway consultant to that organization.

...E. F. R. Horner, as sales promotion manager, Champion Spark Plug Co., Toledo, Ohio.

...Matthew A. Taylor, as manager of sales operations, Ethyl Corp., New York, N. Y.

...Charles R. Crowder, executive vice president of Van Norman Co., Springfield, Mass.



...William D. Merrifield, as industrial education director, Chrysler Corp., Detroit, Mich.



...William S. Woolsey, director of truck sales Dodge Division, Chrysler Corp., Detroit, Mich.

...Victor G. Gross, as manager, Fruehauf Trailer Co., Cincinnati, Ohio, branch, and E. R. Neumann, as manager of the Dayton, Ohio, branch.



...Paul R. Larimer, general sales manager, Ansul Chemical Co., Marinette, Wis.

...Joseph Bara, named national distribution manager, Ford Division, Ford Motor Co., Dearborn, Mich., succeeding W. E. Kimbrough recently appointed truck sales department manager of the general sales office.

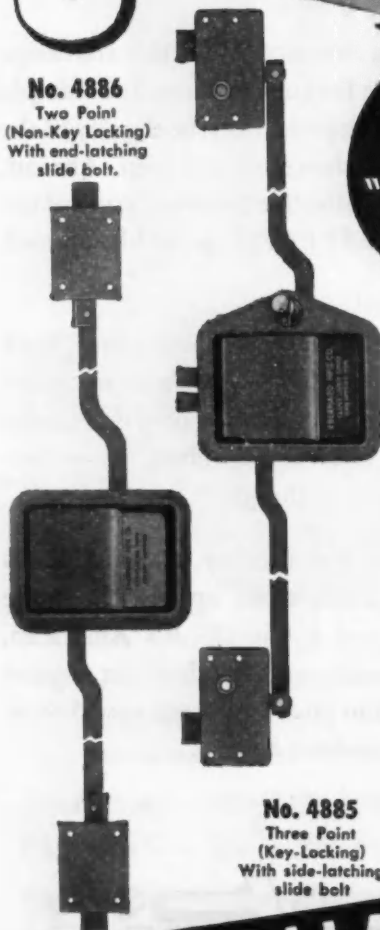


...James R. Hitt (left), of Detroit, Mich., and Robert D. Honig (right), of Omaha, Nebr., division sales managers of Trailmobile, Inc., north central division and west central division, respectively.

(TURN TO PAGE 158, PLEASE)

## 8 New "Paddle Handle" Additions to the popular "RECESSO" LINE

No. 4886  
Two Point  
(Non-Key Locking)  
With end-latching  
slide bolt.



No. 4885  
Three Point  
(Key-Locking)  
With side-latching  
slide bolt

JOB Designed  
and JOB Tested  
"Slamlock"  
Action

Truck body builders everywhere will welcome these eight new Eberhard "Paddle Handle" lock additions. Smooth in appearance and operation, they're available in 1, 2 or 3 point, end-latching or side-latching models, with or without the key locking feature.

Operated by actuating the hinged paddle handle, these locks present a neat "flush with the body or door" appearance when installed with screws, bolts or by spot welding. Illustrated are but two models in the eight now being offered.

Complete literature available upon request.

# EBERHARD *Long Run* TRUCK BODY FITTINGS



EBERHARD MANUFACTURING CO.  
Division of the Eastern Malleable Iron Co. EVARTS AVENUE CLEVELAND, OHIO

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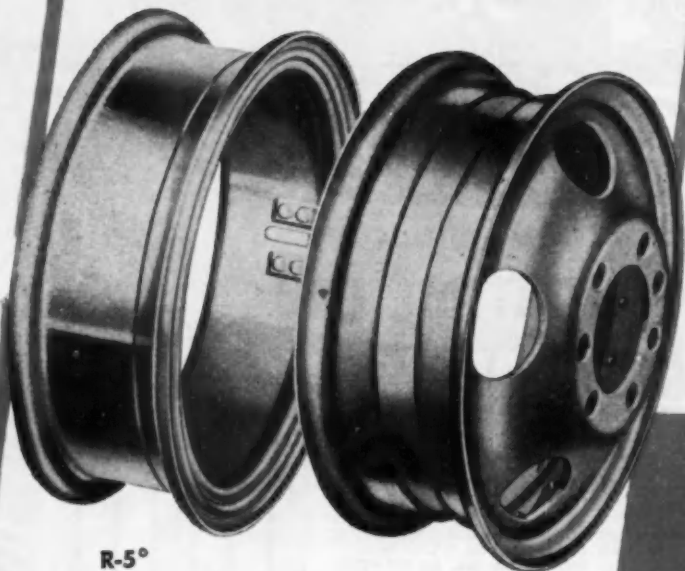
ptember, 1952

# WHEN IS A RIM MORE THAN A RIM?

A RIM is more than just a rim when it does something more than just hold the tire beads—when it contributes to lower tire-cost-per-mile by completely protecting the tire throughout its maximum life. What is a tire's maximum life? It's the life of the original tread mileage plus retreading again and again on a sound tire body. Only when you get full-width solid support under both beads can you expect a tire to give its maximum mileage. It's performance of both tire and rim which you have a right to expect—the kind of performance operators know they get with Firestone Advanced Rims with full-width, solid 5-degree tapers under *both* beads. Start saving money now by reducing tire losses—see your Firestone Rim Distributor today.

## Firestone ADVANCED RIMS

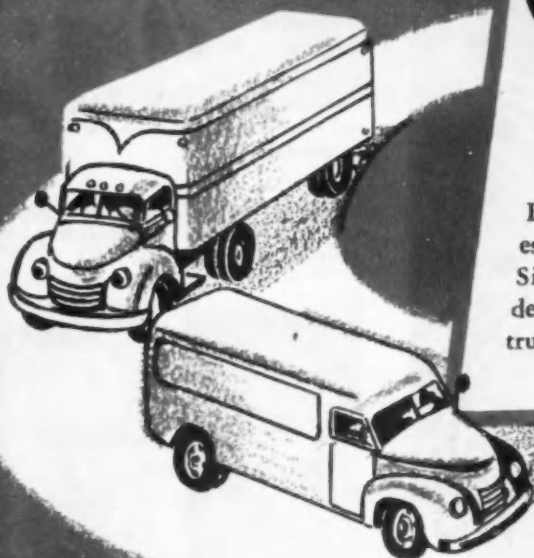
Have Full-Width 5°  
Tapers Under Each Bead



R-5°

RH-5°

Firestone R-5° and RH-5° Rims are designed especially for today's long, high-speed runs. Sizes in demountable (R-5°) and non-demountable (RH-5°) types are available for trucks of one-ton capacity and over.



**BETTER ROAD STABILITY · GREATER TIRE MILEAGE · LOWER TIRE COSTS**

Enjoy the Voice of Firestone on Radio and Television Every Monday Evening over NBC

Copyright, 1952, Firestone Steel Products Co.

COMMERCIAL CAR JOURNAL, September, 1952



## Introducing . . .

Continued from Page 156

... Earl N. Hoekenga, vice president industrial relations, George F. Alger Co., Detroit, Mich., and Charles S. Marshall as manager of fleet maintenance.

... Ray F. Halloran, as general freight agent, George F. Alger Co., Toledo, Ohio.

... Peter T. Beardsley, appointed manager of American Trucking Associations, Inc., legal department, and Esker O. Ox-

ley and Richard A. Staley appointed to the research staff.

... James E. Hawthorne, elected executive vice president and general manager, Allied Van Lines, Inc., Broadview, Ill.

... William C. Hanway, Jr., vice president of the Fargo Motor Corp., Detroit, Mich.



... C. J. Berini, appointed division manager, Wayne Division, Gar Wood Industries, Inc., Wayne, Mich., and H. D. Chicoine, as assistant division manager.

... Fred C. Schulz, Don W. Gates and Grover C. Clark, moved to new assignments with B. F. Goodrich Company's Associated Tire & Accessories Division. Schulz becomes Pacific Coast manager for the division succeeding K. K. Kantzer who died recently. Gates has been appointed merchandising manager and Clark becomes advertising and sales promotion manager.

... Richard H. Gillespie, as New York GMC truck zone manager, GMC Truck & Coach Division, General Motors Corp., New York, N. Y., and Max L. Strausser, assistant manager for the Philadelphia, Pa., zone.

... Philip Jones, assistant director of sales and merchandising, R. M. Hollingshead Corp., Camden N. J.



... Gary A. Stern, named Denver area district sales manager, Watson Bros. Transportation Co., Inc., Denver, Colo.

... Thomas J. Delaney, public relations director, assumes the duties of advertising manager, replacing Robert F. Wood, retired, Autocar Co., Ardmore, Pa.

... A. K. Tice, appointed national accounts and fleet sales manager for the Sacramento, Cal., area, Fruehauf Trailer Co., Detroit, Mich.

... F. H. Ebbert, vice president and general sales manager, Gustin-Bacon Mfg. Co., Kansas City, Mo.

... Harry L. Smith, Jr., made staff manager, product sales, Aluminum Co. of America, Pittsburgh, Pa.



... H. G. Arnot (left), manager and George W. DeSelle (right), assistant manager, of the newly created Pacific coast Fageol Van Truck Sales and Service Division, Twin Coach Co., San Francisco, Cal.

(TURN TO PAGE 160, PLEASE)



# STOP COSTLY SKID ACCIDENTS

## Penetred<sup>®</sup>

### THERMODUCTOR

## SKID-CONTROL COILS

### FOR ALL YEAR 'ROUND

Penetred THERMODUCTOR Steel Claws give you Skid-Control and MAXIMUM DRIVING SAFETY all year 'round. . . Claws that cut thru Ice and Snow in winter, and Slick road film in summer, for INSTANT ACTION. . . DEPENDABLE ACTION. No precious time wasted, no turning on the switch, and waiting for sand or grit. . . just apply the brakes, for SAFE Straight Line Stops. . . or step on the gas, for FASTER Starts without side Sway or slip.

**COOLER RUNNING**

Penetred THERMODUCTOR Coils also reduce excessive heat that destroys vital tread rubber in regular tires, by conducting it out of the shoulder area. . . to give you the COOLEST running tire ever known.

**FEWER PUNCTURES**

Penetred THERMODUCTOR Coils act as an armour plate and reduce punctures from 75 to 90 percent, by shunting off broken glass, nails and many other objects that otherwise cut the carcass, and keep it in better condition for the second and third retread. . . for longer mileage. Some records show from 35 to over 100 percent increase.

**Get a Free Demonstration**

No words can describe the spectacular performance of Penetred Skid-Control. . . only your foot on the Brakes, or on the Gas can tell the story, for there is nothing in the world that gives you the "Feeling of Security" that Penetred gives you all year 'round. . . so get a Free demonstration today. . . in the meantime write for "The MIRACLES of Penetred."



OVER 2000 STEEL CLAWS IN EVERY TIRE

**ASK ANY TIRE SERVICE STATION ABOUT "PENETRED"**

**PENETRED CORP. MARSHFIELD WISCONSIN**

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mber, 1952

# 20 NEW FAGEOL VANS give

## United Parcel Service

### more payload space in shorter trucks

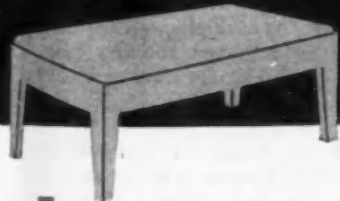
### PLUS FASTER LOAD HANDLING



Fageol Van Model FV-24

**"We believe the FAGEOL VAN to be a long step forward in efficient vehicle design"**

says United Vice President W. D. Bixby



**A**mong the prominent fleet operators now using new Fageol Vans is United Parcel Service. This famous nation-wide retail delivery organization has just placed 20 new Fageols in service for its furniture operations in Chicago.

"We recognized the extra efficiency of these well-designed vans at first sight," says W. D. Bixby, United vice president. "Their obviously greater merchandise capacity per foot of length and inch of wheelbase means less garage space occupied and improved maneuverability. The latter feature, plus excellent vision from a comfortable seat as provided by the modern design of the driver's compartment, should appreciably improve production and at the same time lessen operator fatigue and reduce the accident hazard."

\*Super Freighter. Registered trade name.

Write for Catalog L-5494

#### BEFORE YOU BUY

#### CHECK THESE FAGEOL VAN FEATURES!

- ✓ 20 to 35 ft. body sizes.
- ✓ 200 to 500 cubic ft. more payload space per truck.
- ✓ 10 to 15% faster load handling by operating personnel.
- ✓ The world's safest and strongest trucks because of patented \*Super Freighter integral design.
- ✓ Easier to handle and park in congested traffic . . . better corner maneuverability.
- ✓ Low initial cost and substantially reduced operating cost.
- ✓ Utilizes mechanical components of International L-150-160-170-180-190-200 trucks.
- ✓ Parts and service available from 5,000 International dealers.



**TWIN COACH COMPANY**  
KENT, OHIO

In Canada: Twin Coach of Canada, Ltd.  
Toronto 5, Ontario

## Introducing . . .

Continued from Page 158

... W. B. Johnson, as sales promotion manager, Norge Heat Division, Borg-Warner Corp., Kalamazoo, Mich.

... Gilbert E. Good, appointed territorial manager, NAPA Denver warehouse, Martin-Senour Co., Chicago, Ill.

... John A. Roberts, elected vice president and director, P. B. Mutrie Motor Transportation, Inc., Waltham, Mass.

... Lucien W. Shaw, appointed general counsel, Bekins Van and Storage Co., Los Angeles, Cal.

... W. A. Hagen, general sales manager, United Motors Service division of General Motors Corp., Detroit, Mich., succeeding Charles P. Culhane, who passed away recently.



... E. Swain Russey, elected president of Warner Gear Division, Borg-Warner Corp., Muncie, Ind., succeeding A. P. Emmert who will continue as vice chairman of the Supervisory Board and as vice president, Borg-Warner Corp.

... Griffith W. Lindsay, chief engineer, Buckeye Iron & Brass Works, Dayton, Ohio.

... William P. Sims, as branch manager, Norfolk, Va., Fruehauf Trailer Co., Detroit, Mich.

... Donald McLeod, as coach representative, Coach Division, GMC Truck & Coach Division, General Motors Corp., with headquarters in Louisville, Ky.

... Frank G. Penl, as sales manager, McDougall-Butler Co., Buffalo, N. Y.

... Donald R. Guthrie, as executive engineer in charge of engineering research, Minnesota Mining & Mfg. Co., St. Paul, Minn.

... Arthur C. Bryan, appointed vice president in charge of sales, National Carbon Co., Union Carbide & Carbon Corp., New York, N. Y., and F. W. Berdan as sales manager of automotive products.

... James O. Green, retail sales promotion manager, Willard Storage Battery Co., Cleveland, Ohio.



... Donn D. Greenshields, elected executive vice president, National Screw & Mfg. Co., Cleveland, Ohio, and George F. Jenkins as sales vice president.

... Frank A. Good, as division sales manager, Ohio Division, Pennsylvania Refining Co., Cleveland, Ohio.

... S. C. Williams, as general field sales manager, and Walter W. Kempfert, Mid-West district manager, of Pyrene Mfg. Co., Newark, N. J.



... O. A. Roeger (left), assistant to the sales manager and Thomas Harvey (right), manager of territory No. 2, Roeger's former position, AP Parts Corp., Cleveland, Ohio.

# THE BIEDERMAN TRUCK



**An All-Star Truck  
Constructed of All-Star Units  
Doing an All-Star Job Since 1920**

**DEALERS:** Compare the Biederman National Standard Model with any truck on the market and you will agree that it is an All-Star team in itself.

Only the most sturdily constructed units of America's leading manufacturers are built into it.

Biederman Trucks win by performance. Inquiries regarding dealership solicited.

WRITE, WIRE or PHONE

**BIEDERMAN MOTORS CORPORATION  
CINCINNATI 14, OHIO**



lected president  
n, Borg-Warner  
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Works, Dayton,

branch manager,  
Trailer Co., De-

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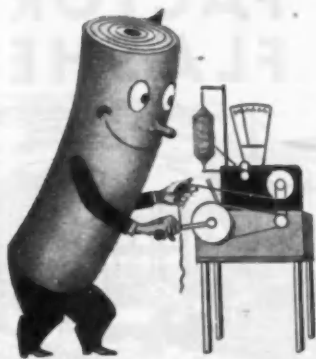
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September, 1952



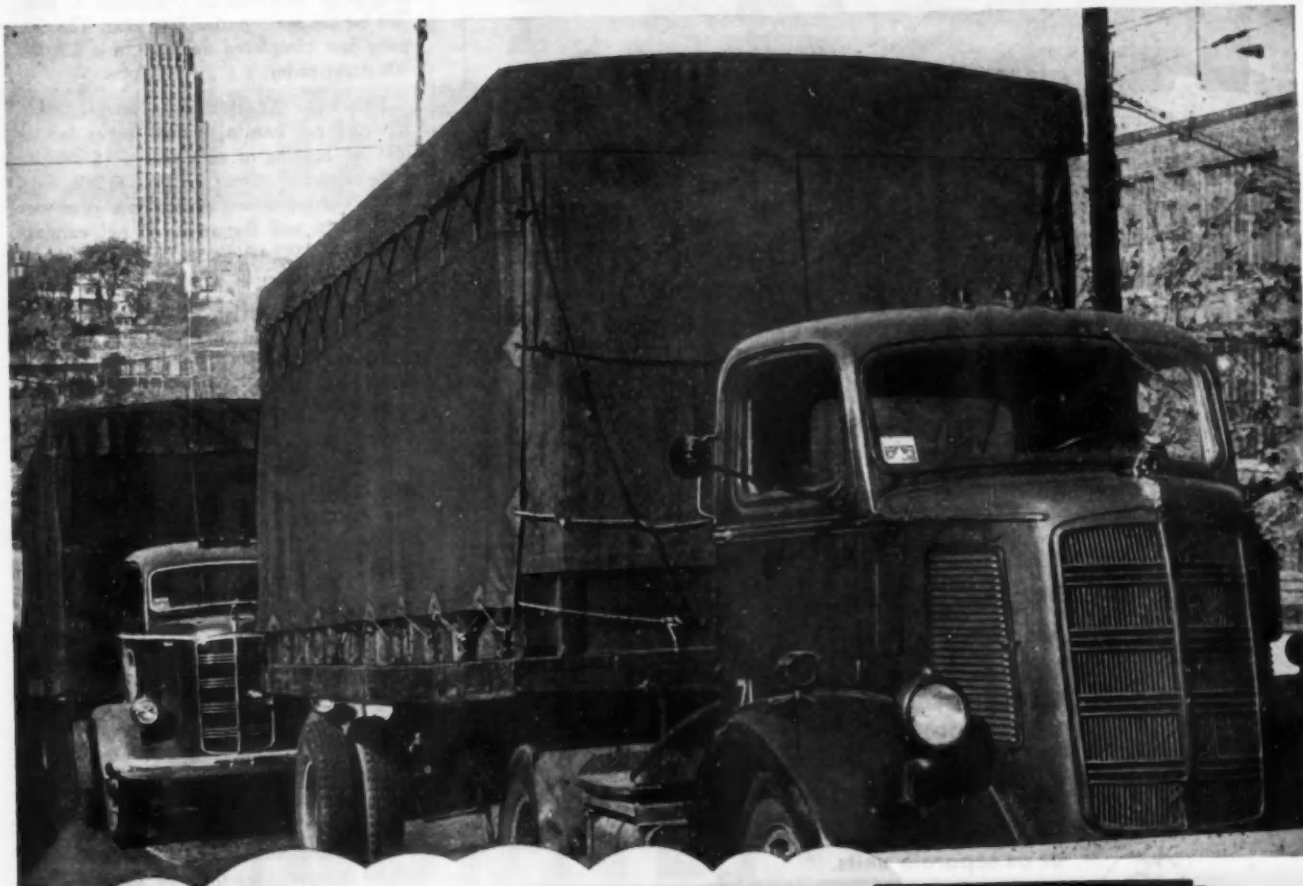
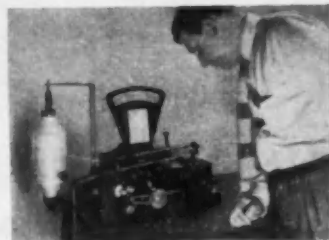
# UNIFORMITY

## Makes the Big Difference In TRUCK COVER Fabrics



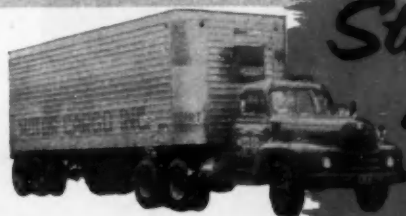
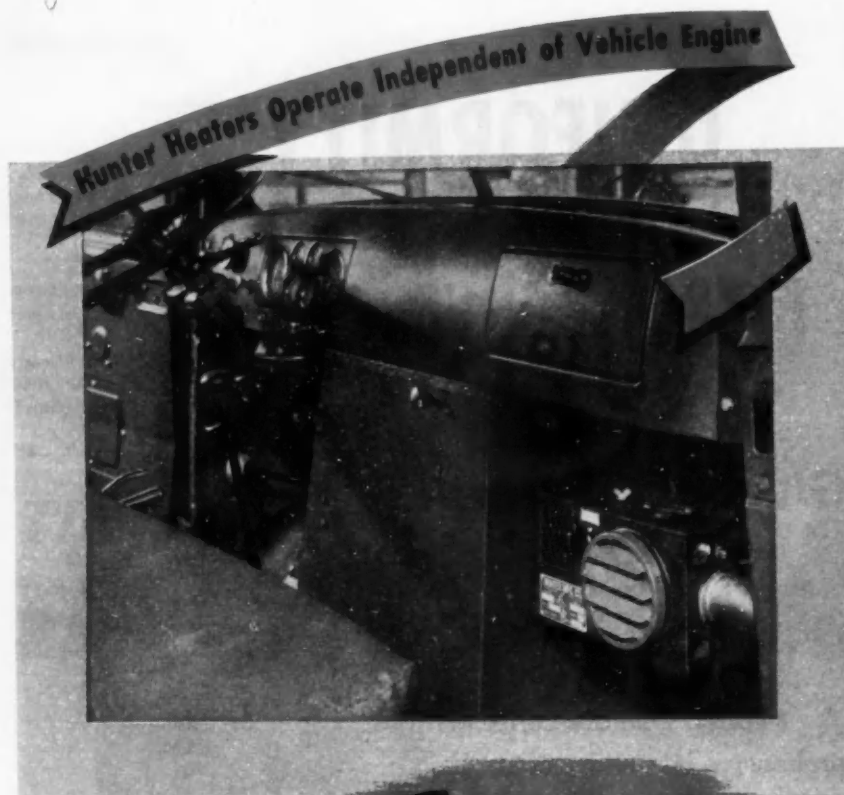
### Gives You Greater Fabric Uniformity

Checking evenness  
of roving with Belger  
Tester. One of a series of  
comprehensive laboratory controls  
throughout production to assure uniformity  
in all Mt. Vernon-Woodberry products.



**Mt. Vernon-Woodberry Mills**  
Branch Offices: Chicago • Atlanta • Baltimore • Boston • Los Angeles

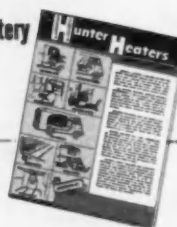
**TURNER HALSEY**  
COMPANY  
Selling Agents  
40 WORTH ST. • NEW YORK



*Stop Costly  
Engine  
Idling!*

- Gasoline Burning, Average 1 Pt. Fuel per Hr.
- Heat Without Engine Wear
- Cut Heat Costs by Half or More
- Safe, Dependable
- For Diesel or Gas-powered Rigs
- Equally Efficient On or Off the Road
- Sub-zero Starting, Unfailing Combustion
- Heat Range 5,000 to 15,000 B.T.U. per Hr.
- Compact, Easily Installed
- Exhaust to Outside
- Fueled from Vehicle Tank or Separate Tank as Required
- Powered by Vehicle Battery

Write for bulletin giving detailed information on Hunter Gasoline Heaters for the transport industry.



There's a Hunter Gasoline Heater for every transport need:

<b>TRUCK CABS</b>	<b>WALK-INS</b>
<b>DELIVERY BODIES</b>	<b>TRAILERS</b>
<b>UTILITY BODIES</b>	<b>MILITARY UNITS</b>



HUNTER CARGO COOLERS — economical, dependable dry-ice refrigeration systems — are available in COMBINATION UNITS with HUNTER HEATERS or as separate units.

**HUNTER MANUFACTURING CO.**

1550 E. 17th St. • Cleveland 14, Ohio

## FACTORY FLASHES



Willys-Overland Motors, Inc., Toledo, Ohio, will give five, four-year scholarships to the University of Toledo this month to children of employees.

Cummins Service & Sales, Los Angeles, Cal., has fitted a panel truck with special tools and equipment and is on call to assist fleet men in their maintenance programs and in solving specific repair problems.

Gramm Trailer Corp., Lima, Ohio, will consolidate operations in their main Delphos, Ohio, plant and will add two new trailers to their line.

Twin Coach Co., Kent, Ohio, reported a net profit of \$534,000 for the first six months of this year as compared to \$486,730 for the same period last year. The company just completed delivery of a \$20,000,000 Army order.

Fruehauf Trailer Co., Detroit, Mich., reported net earnings after taxes for the first six months of this year of \$3,001,165 with sales amounting to \$86,504,282. Sales in the corresponding period last year were \$76,829,316 and the adjusted net earnings were \$3,415,365. Defense material sales for the past six months were \$30,102,253.

Wix Accessories Corp., Gastonia, N. C., has acquired 70,000 sq ft of manufacturing and warehousing floor space for immediate use with another 150,000 sq ft left for future expansion. Included are increased laboratory and engineering facilities.

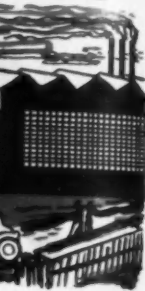
Dodge Division, Chrysler Corp., Detroit, Mich., announced retail deliveries of new trucks reported by dealers for the week ending July 5 set a new high record for any one week in the 38 yr history of the company. It exceeds by 39.9 per cent the previous record for any one week set in 1950.

Binks Mfg. Co., Chicago, Ill., has announced the schedule for its industrial spray painting school for supervisory, sales and service personnel; Sept. 8 to 12 inc., Oct. 6 to 10 inc., and Nov. 10 to 14 inc.

GMC Truck & Coach Division, General Motors Corp., Pontiac, Mich., has been awarded military contracts for commercial type vehicles totaling \$5,246,497.

Allen Electric & Equipment Co., Kalamazoo, Mich., has announced its new courses in automotive electrical and engine performance diagnosis and correction to be conducted at Allen Service Centers and other facilities throughout the country.

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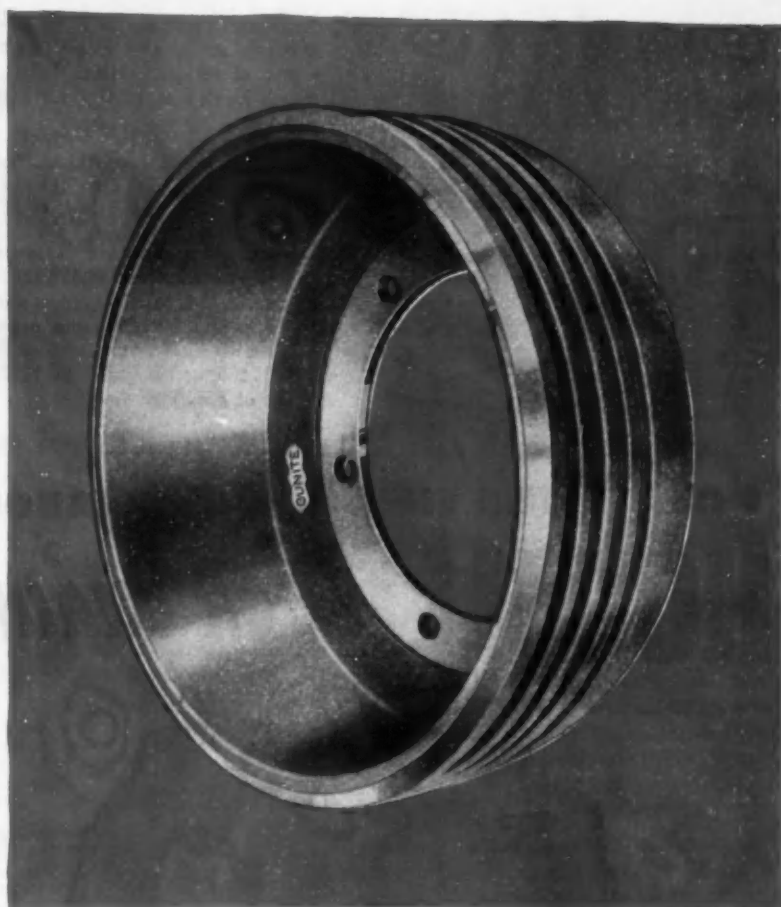
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## GUNITE DRUMS

### METAL MAKES THE DIFFERENCE

Gunite metal is important to the life and performance of every Gunite brake drum. Its high tensile strength resists heat check and causes less brake surface wear. Gunite design is important, too, when it comes to sure-stop service with peak loads. The special heavy-rib construction dissipates heat faster and more thoroughly... counteracts flexing and fading. • To save maintenance costs and keep "down time" to a minimum, equip your rigs all-around with Gunite rugged-duty brake drums. Ask your distributor.



**GUNITE FOUNDRIES CORPORATION**

Rockford, Illinois



## FLEET NOTES



Watson Brothers, Inc., had more than 700 guests at an open house to mark the opening of their new Des Moines, Iowa, terminal located at 1953 South East Market St.

Hayes Freight Lines, Inc., has completed a new \$250,000 terminal at Clinton and Ridge Roads, Cleveland, Ohio.

Pacific Intermountain Express Co., Oakland, Cal., reported \$9,592,619 in revenue for the first half of 1952 as compared with \$9,347,788 for the same period last year. The net after estimated income taxes was \$233,256 as compared to 1951's first half net of \$556,517.

## NOW IS THE TIME TO THINK ABOUT HODELL TRUCK CHAINS



Don't wait until demand overwhelms the supply . . . order your truck chains today. Dependable and rugged Hodel Truck Chains are built for maximum wear and protection . . . and they're locked securely under the roughest and toughest road conditions by the patented Hodel ONE-HAND Fastener.

Hodel Truck Chains are made in all sizes of Regular, Extra Heavy

and Bar-Reinforced. For dual pneumatics, Hodel Chains come in three types: for outer tire only . . . or full-width cross chain to cover both tires . . . or with triple side chains and staggered cross chains for tops in traction. Write us today about your requirements.

**HODELL CHAIN COMPANY**  
Cleveland 3, Ohio

Division of The National Screw & Mfg. Co.



FASTENERS



HODELL CHAINS



CHESTER HOISTS

St. Louis-Nashville Freight Lines, Inc., recently occupied a new terminal at 85 Trimble St., Nashville, Tenn.

Bekins Van & Storage Co. president, Milo W. Bekins, was appointed chairman of the California State Chamber of Commerce State Highway Committee and a member of the California Major Highway Development Committee.

Pemiscot Motor Freight Line, Memphis, Tenn., became the F & M Line with headquarters in St. Louis, Mo., following its purchase by Frank Walsh, former president of Walsh Freight Lines.

Riss & Co., Kansas City, Mo., opened a new \$800,000 terminal in the Allston district of Boston, Mass.

Consolidated Freightways, Inc., Portland, Ore., and its subsidiaries showed a gross carrier operating income of \$28,077,169 during 1951. Net earnings before taxes were \$1,491,104, with net income after provision for taxes amounting to \$711,314.

Associated Transport, Inc., New York, N. Y., reported \$37,345,010 income for the first six months of 1952, with a net income before taxes of \$850,000.

Hinchliff Motor Service, Inc., Chicago, Ill., has moved to Pulaski Road and 34th St., purchasing an additional 60,000 sq ft for future expansion.

Interstate Motor Freight System, Inc., completed a new \$275,000 terminal at 519 Hopkins St., Buffalo, N. Y. Coder Service, Inc., constructing Interstate's equipment, starts construction on a \$60,000 garage at 420 Hopkins St.

Gorea's Motor Express, Inc., Utica, N. Y., announced the opening of new terminals in Albany and Syracuse with plans made for one in Watertown, N. Y.

Middle Atlantic Transportation, Inc., has opened a new Cleveland area terminal at 10720 Memphis Ave., Brooklyn, Ohio.

### 7700 Gallons of Gasoline



Tide Water Associated Oil Co. uses this International LFD-405 diesel in its western division for hauling 7700 gal of gasoline in one load. The western built, six-wheeler has a 221-in. wheelbase with a 3300-gal tank body. The four-wheel trailer mounts a 4400 gal tank. The truck is equipped with a five-speed transmission with a three-speed auxiliary and has underdrive, direct and overdrive.

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# "Tachographs

THE TIME-TESTED RECORDING SPEEDOMETERS

**PLAZA EXPRESS CO. SOUTHERN EXPRESS INC.**  
ST. LOUIS, MO. DALLAS, TEXAS

*Divisions of  
Columbia Highway Express System*

Wagner Electric Corporation  
6400 Plymouth Avenue  
St. Louis 14, Missouri

Gentlemen:

Safety on the highway is vital in getting motor freight through on schedule and in good condition. Plaza Express Company and Southern Express Inc. are hitting hard on safety programs drafted by highly qualified safety engineers.

An important element in these safety programs has been the equipping of all our 315 over-the-road tractors with Tachographs. They record vital information about our units while on the road. We want steadily controlled speeds. We are dead set to prevent the dangerously high speeds that cause accidents, cost lives and damage cargoes.

The results speak for themselves. The Tachographs were installed about eight months ago, when Plaza and Southern were taken over by the Columbia Terminals Company. Before then, frankly, the accident record was unsatisfactory. Since then there has not been a single serious road accident. This record has been established while our equipment has travelled some 16,000,000 miles, much of it on dangerously icy roads. The Tachograph is a big factor in our ability to give the most reliable service possible on tightly controlled schedules.

We bring this to your attention because we believe that the Tachograph is important in making our safety programs so successful.

Yours very truly,

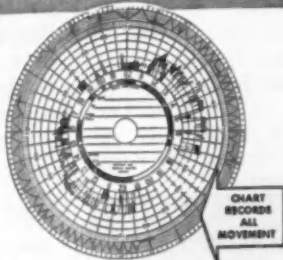
*Fielding Childress*  
Fielding Childress

*are important  
in making our  
safety programs  
successful"*

Says: Fielding Childress, President  
COLUMBIA HIGHWAY EXPRESS SYSTEM

Like the Columbia Highway Express System, hundreds of successful fleet operators who have installed Tachographs know that these time-tested recording speedometers have helped them establish enviable safety records. They know, too, that the Tachograph helps make good drivers, protects their rolling stock and reflects in added economies in their over-all operation.

The Tachograph is a scientifically designed, accurate recording speedometer. Easy to install on the dash and connected to the speedometer cable, it gives a complete charted record of all movements of the vehicle—When engine started... How long engine idled... When vehicle was in motion... How fast it travelled... When vehicle stopped... and Distance travelled between stops. Mail coupon below for full information.



## Wagner Electric Corporation

6476 PLYMOUTH AVE., ST. LOUIS 14, MO.

Please send a copy of Bulletin SU-3B.

Name and Position \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

We operate \_\_\_\_\_ Vehicles \_\_\_\_\_

(NUMBER)

552-7

DISTRIBUTED BY WAGNER ELECTRIC CORPORATION

COMMERCIAL CAR JOURNAL, September, 1952

# CCJ LEGAL CORNER



## Keep Passengers Out

A DRIVER for the Butte Tallow Co., Ohio, California, tipped over a Chevy Truck with a five-ton load of fats coming down Inskip grade in the Sierras last Winter when he was carrying a "buddy" along for company. The "buddy" sued the fleet owner and won.

The case is of general interest for two reasons. First, because it clearly shows the risk of carrying extra passengers and secondly, because the judge allowed another driver to testify as to how the truck should have been driven down the hill.

The injured passenger was an employee of the owner of the Butte Tallow Co. On this trip he helped put chains on going up over the pass and helped load the truck.

On the strength of that assistance and the fact that on a trip made a few weeks before the accident the company had given him some money for help rendered the judge decided that Fedler was a passenger and not a guest. If Fedler had been a guest he would have had to prove gross negligence before he could recover damages.

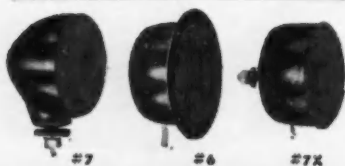
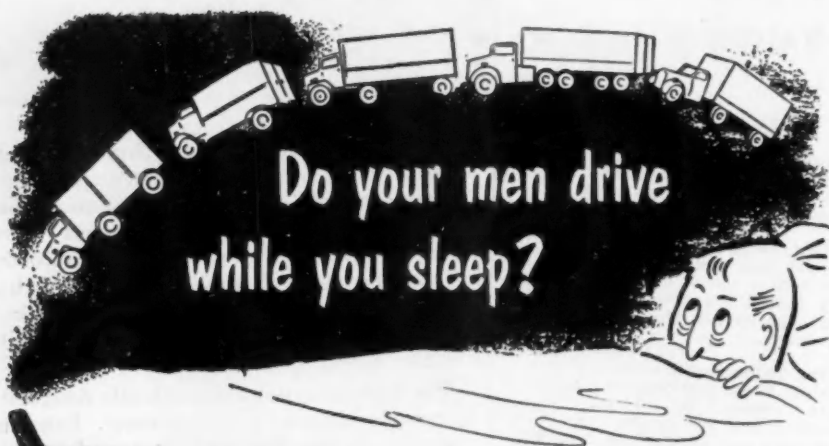
If a rider is an employee, is paying to ride either in cash or assistance, or if his riding helps the truck owner in any way as when a truck delivers a salesman to his territory, he is a passenger and the driver is responsible for him. But if the rider is only a hitch-hiker or a friend of the driver whose presence does not in any way help the company's business ordinarily he cannot recover damages if he is hurt in an accident.

The only time that he can is when the driver was grossly negligent and that means drunk, passing at sixty miles an hour on a two lane road going up a hill, or something of that nature. As no professional driver is likely to be guilty of gross negligence; the risk is in carrying "passengers."

The other point in the case is a new one. This accident happened because the brake cylinder exploded and the clutch gave out so the truck rolled free down the mountain. The passenger had another of Hygeland's testifies as to how he would have taken the truck down.

Of course the man who had not driven the truck testified that he would have shifted into lower gear at the top of the hill before the clutch gave out and started braking before he began to descend so the brakes wouldn't heat.

Such testimony has ordinarily not been allowed as there might be many safe ways to take a truck down a steep grade, and also because hindsight is never reliable. However, if such evidence can be used in the future a fleet operator can utilize it much more effectively than a claimant.



**Signal-Stat**  
CORPORATION  
SIGNAL-STAT BUILDING  
23-539 Kent Avenue, Brooklyn 11, N. Y.

**Do your men start their run when your day's work is done? Do they drive at night?**

Your men are a vital part of your Organization. They are your partners in rendering your customers the service that you sell. You entrust them with expensive equipment and valuable cargo — carrying out their job successfully means your success. Sure, you put in a hard day's work, but turning over cargo and equipment to the drivers does not free you of responsibility. Their safe arrival at their destinations is your primary concern. Equip the vehicles they drive with **SIGNAL-STAT**

### DIRECTIONAL SIGNALS

Your men will drive more safely and you will sleep more soundly.

*SIGNAL-STAT Class "A" Signals give you the greatest safety protection. They're Signaleered®*

**"Signaleered"** means "precision engineered" construction . . . not just any piece of metal, not just any lens . . . but the best materials, engineering and design make up SIGNAL-STAT class "A" Lamps. We invite you to make your own inspection.

With Signal-Stat Class "A" Signals you're legally protected.  
Approved in all 48 states and District of Columbia.



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## OUR EXPERIENCE HELPS YOU PROFIT

DeVilbiss engineers have spent years working with vehicle manufacturers to get better, more lasting finishes. The vast majority of manufacturers, transit companies and fleet operators today use DeVilbiss equipment. We'll gladly pass along to you helpful data on duplicating top quality in your shop.



You wouldn't drive at night with only one headlight

## Why paint with inadequate equipment?

**A complete** DeVilbiss Paint Shop provides: scientifically lighted and ventilated spray booth, lightweight, easy-to-use spray-guns, an efficient air compressor of proper capacity, air transformer, hose and connections—all balanced with one another for maximum efficiency.

**The man** to call is your local DeVilbiss Jobber. He'll gladly make a survey of your requirements and

show you how present equipment can be integrated into a modern DeVilbiss Paint Shop at modest cost.

**You'll** refinish vehicles faster, better and easier in a modern, fully equipped DeVilbiss Paint Shop.

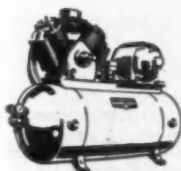
**The difference** in quality and efficiency is surprising. You'll soon find out how costly and wasteful make-shift or inadequate equipment is.

### A New Service!



Now—exchange worn-out guns, compressor parts, for factory-rebuilt units! Saves delay. Nominal charge.

THE DEVILBISS COMPANY, Toledo, Ohio—Windsor, Ontario • London, England • Santa Clara, Calif.—Branch Offices in Principal Cities



Air Compressors



Spray Guns



Hose and Connections



Spray Booths

FOR BETTER SERVICE, BUY

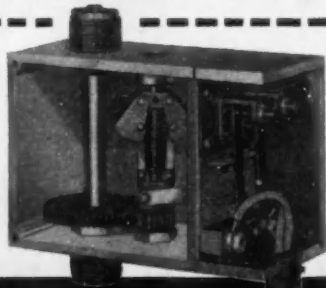
# DEVILBISS



NEVER BEFORE  
SUCH AN OFFER

FREE TRIAL

PREPAID TO YOUR DOOR



JUST TRY

**SAFETY SPEED**  
*Electric* **GOVERNOR**

#### THE ONE FULL POWERED GOVERNOR

Nine thousand satisfied customers can't be wrong. Safety Speed Electric Governor gives 100% full power in all gears up to the determined control speed.

One model fits any make of vehicle.

Installation in less than one hour. Safety Speed Control will outlast vehicle. Can be removed easily and reinstalled on new vehicle.

Protect your drivers and your equipment. 88% of all accidents are caused by human indifference, 11% by mechanical failures, only 1% by acts beyond control.

- ✓ Reduce Accidents
- ✓ Reduce Insurance Costs
- ✓ Repair Bills Take a Holiday

Accidents by unsafe speed can happen to you and your equipment. Help your drivers protect themselves and YOU.

#### YOU CAN'T BEAT THIS TRIAL OFFER

Try Safety Speed Control without cost for 60 days. For a limited time this special trial price is \$15 (Regular list price is \$24.95). We will send it prepaid.

**SAFETY SPEED CONTROL CO.**  
7800 N.E. 4th Ct., Box No. cj-1, Miami 38, Fla.

Send . . . Safety Speed Control Electric Governor(s) with installation instructions. I will try it for 60 days. It is agreed that I may return the Governor without obligation if it isn't all you say it is, or I may keep it and be billed at the special trial offer price of \$15.

My Name is . . . . .

Co. Name is . . . . .

Address . . . . .

City . . . . . State . . . . .

## Hopper Trailers for Soda Ash

Designed and built at the Kearny, N. J., plant of the Fruehauf Trailer Co., for operation in Tennessee, these hopper trailers weigh 6250 lb. Used with an 11,000-lb tractor, they permit a 24,750 lb payload within the state's 42,000-lb gross vehicle weight limit.



Actual capacity of the bodies is 831 cu ft. In carrying soda ash, this capacity allows 15 per cent over theoretical payload in order to take care of voids in loading.

The soda ash is loaded through hatches at the top of the body and is discharged through the bottom by means of a Fuller & Co., Airveyor. This is a "sock" on the bottom of the trailer to which, in unloading, is attached a 6-in., semi-rigid hose.

A booster vacuum pump on the third floor of the destination mill pulls the soda ash out of the hopper through the hose and up to the third floor.

These hoppers are also provided with air vibrators which operate from an air break storage tank. These help in loading and unloading by preventing possibility of cavitation of the product.

Four of these units were built for Lemmon Investment Co., Marion, Va., which lease them to Mathieson Chemical Co., for use between the Mathieson plant and Mead Corp., Kingsport, Tenn., a large paper manufacturer.



"No matter how high he's climbed, the boss has never lost the common touch"

## Budd Wheel Distributors provide the same service described in this advertisement

AKRON—Motor Rim Manufacturers Co.  
ALBANY—Wheels, Incorporated  
ALBUQUERQUE—Wheels & Brakes, Inc.  
ATLANTA—Harris Automotive Service, Inc.

BALTIMORE—R. W. Morris & Sons, Inc.  
BIRMINGHAM—Wheel, Rim & Parts Co.  
BOSTON—New England Wheel & Rim Co.  
BUFFALO—Frey, the Wheelman, Inc.  
CHARLOTTE—Carolina Rim & Wheel Co.  
CHICAGO—Stone Wheel, Inc.  
CINCINNATI—Rim & Wheel Service, Inc.  
CLEVELAND—Motor Rim Manufacturers Co.  
COLUMBUS—Hayes Wheel & Spring Service  
DALLAS—Southwest Wheel, Inc.  
DAVENPORT—Stone Wheel, Inc.  
DAYTON—Rim & Wheel Service, Inc.  
DENVER—Quinn & McGill Motor Supply Co.  
DES MOINES—Des Moines Wheel & Rim Co.  
DETROIT—H. & H. Wheel Service, Inc.  
EVANSVILLE—Auto Wheel & Rim Service Co., Inc.  
FARGO—Wheel Service Company  
FORT WAYNE—Wheel & Rim Sales Co.  
GRAND RAPIDS—Rim & Wheel Service Co.  
HARRISBURG—Standard Rim & Wheel Co.  
HARTFORD—Connecticut Wheel & Rim Co.  
HOUSTON—Southwest Wheel & Equipment  
INDIANAPOLIS—Indiana Wheel & Rim Co.  
JACKSONVILLE—Southeast Wheel & Rim Co.  
KANSAS CITY—Borbein, Young & Co.  
KNOXVILLE—Harris Automotive Service, Inc.  
LOS ANGELES—Wheel Industries, Inc.  
LOUISVILLE—Auto Wheel & Rim Service  
MEMPHIS—Beller Wheel Brake & Supply Co.  
MILWAUKEE—Stone Manufacturing Co.  
MOLINE—Mutual Wheel Co.  
NASHVILLE—Beller Wheel, Brake & Supply Co.  
NEWARK—Automotive Safety Inc.  
NEW HAVEN—Connecticut Wheel & Rim Co.  
NEW ORLEANS—Southern Wheel & Rim Co.  
NEW YORK—Wheels, Incorporated  
OKLAHOMA CITY—Southwest Wheel, Inc.  
OMAHA—Morgan Wheel & Equipment Co., Inc.  
PEORIA—Peoria Wheel & Rim Co.  
PHILADELPHIA—Thomas Wheel & Rim Co., Inc.  
PITTSBURGH—Wheel & Rim Sales Co.  
PORTLAND—Six Robblees', Inc.  
PROVIDENCE—New England Wheel & Rim Company  
RALEIGH—Carolina Rim & Wheel Co.  
RICHMOND—Dixie Wheel Co., Inc.  
ROCHESTER—Frey, the Wheelman, Inc.  
SALT LAKE CITY—Henderson Rim & Wheel Service  
SAN ANTONIO—Southwest Wheel & Equipment  
SAN FRANCISCO—Wheel Industries, Inc.  
SEATTLE—Six Robblees', Inc.  
SOUTH BEND—Wire & Disc Wheel & Sales Service  
SPOKANE—Bearing & Rim Supply Co.  
SPRINGFIELD, ILL.—Illinois Wheel & Brake Co.  
SPRINGFIELD, MO.—Borbein, Young & Co.  
ST. LOUIS—Borbein, Young & Co.  
ST. PAUL—Wheel Service Co.  
SYRACUSE—Colbourn Wheel & Rim Service, Inc.  
TACOMA—Six Robblees', Inc.  
TOLEDO—Wheel & Rim Sales Co.  
WICHITA—Borbein, Young & Co.  
WINSTON-SALEM—United Automotive Service

#### EXPORT

CLEVELAND—C. O. Brandes, Inc.

#### CANADA

CALGARY—Mutual Supplies, Ltd.  
EDMONTON—Alberta Wheel Distributors, Ltd.  
MONTREAL—Auto Wheels & Supplies, Ltd.  
TORONTO—Wheel & Rim Co. of Canada, Ltd.  
VANCOUVER—Wheels & Equipment, Ltd.  
WINNIPEG—Ft. Garry Tire Service Ltd.

## THESE WHEELS ARE NOW UNDER THEIR THIRD TRUCK!

● That truck below, under the shovel, is riding on heavy-duty 20x6.50 Budd wide-base wheels with a taper under both bead seats. *And this is the third truck to use the same wheels.*

The Weakley County Highway Department of Tennessee changed over to these Budd wheels after a survey by Tom Forrester of Beller Wheel Brake & Supply Co., Budd wheel distributor in Memphis. 8.25x20 tires were used in both instances.

Before the change-over, the Highway Department was experiencing disc and rim breakage with its 20x6.0 wheels. Since the change-over, there has not been a wheel failure on this fleet of 16 gravel and dump-body trucks, except for a single incident caused by loose wheel nuts. Records show that previously 6 to 12 failures a month was the average. What's more, tire mileage has been greatly improved and tube failure is practically non-existent.

Because of the advice of Beller Wheel Brake & Supply Co.—and the pleasantly economical experience of the Weakley County Highway Department—all rear wheels on the entire fleet have been changed to the correct Budd Wheel.

Maybe you're not getting your money's worth from the wheels on which you roll. A free survey of your equipment is as close as your phone from your nearest Budd wheel distributor at the left. Call him today and see if you can't SAVE, too!

The Budd Company, Detroit 14

*Specify and Standardize  
on Budd Wheels*



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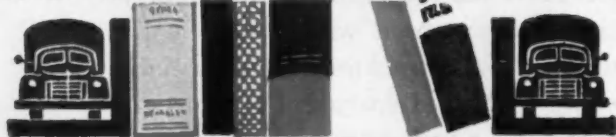
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September, 1952



## Fleetman's LIBRARY



**Dun & Bradstreet Reference Book**, listing three million manufacturers, wholesalers, retailers and services in its 4000 pages, has been revised to use the United States Standard Industrial Classifications for identification. Classification numbers in the vehicle manufacturing field are 3711—motor vehicles, 3712—passenger car bodies, 3713—truck and bus bodies, 3714—motor vehicle parts and accessories, 3715—truck trailers and 3716—automobile trailers. Further information about this credit reference book may be obtained from Dun & Bradstreet, Inc., New York, N. Y.

**Aluminum paint** with an oil and aluminum-chromium flake formula for interior or exterior, hot or cold surfaces is described in Bulletin C 54-8 published by Monroe Co., Inc., Cleveland, Ohio.

**Locknuts**, types and principles of operation, are described in a 23 page brochure available without charge from Locknut Section, Industrial Fasteners Institute, Cleveland, Ohio. It describes and illustrates 36 various types, describing the nut and principle of operation.

**Pump guide**, on heavy stock, letterhead size, listing the various types of Tuthill pumps, services for which they are built, operating data, packing, mounting information and distinguishing features of each model, is available free from Tuthill Pump Co., Chicago, Ill.

**Rollpin styles and uses** are outlined in a free booklet from Elastic Stop Nut Corp. of America, Union, N. J. Rollpins are a slotted and chamfered cylindrical spring pin. Compressed as they are driven into a hole, they exert continuous spring pressure against the sides to prevent loosening through vibration.

**Industrial fasteners** for metal to metal and metal to wood applications are covered in a new handbook published by Southco Division, South Chester Corp., Lester, Pa. Installation procedure, sample applications and dimensional information are given for the company's line of screw fasteners, blind rivets, adjustable pawl fasteners, door latches, spring-grip fasteners, anchor nuts and door retaining springs.

**Hydraulic lift trucks** with from 2500 to 6000 lb capacity and a standard 6 in. lift for moving skid loads are described in a bulletin available from Barrett-Cravens Co., Chicago, Ill. Bulletin 525.

**Truck alarms** produced by the Victor Truck and Car Alarm System, Inc., Clifton, N. J., are briefly described in a folder available from them. These alarms were formerly leased but are now being sold.

**Accounting and financial control** for enterprises large or small is described in a 645 page text written by J. Brooks Heckert, Professor of Accounting, Ohio State University, and James D. Willson, Controller, Plaskon Division, Libbey-Owens-Ford Glass Co. Tells what may be expected of the accounting department and how to use this information in directing sales, planning production, controlling inventories, purchasing equipment or negotiating labor contracts. "Controllershship, the Work of the Accounting Executive" is available from The Ronald Press Co., New York, N. Y. Price \$7.50.



## BENNETT FLEETMETER

- ACCURATE INVENTORY CONTROL
- ELIMINATION OF ERRORS
- FASTER REFUELING
- REDUCED MAINTENANCE COSTS
- SAVING IN MAN-HOURS\*

### Gasoline Pumps

offer these five\* features—and more, because they are especially designed for rugged fleet fueling jobs . . . not a miniature but a full-sized gasoline pump engineered for the fleet operator.

Write for full details

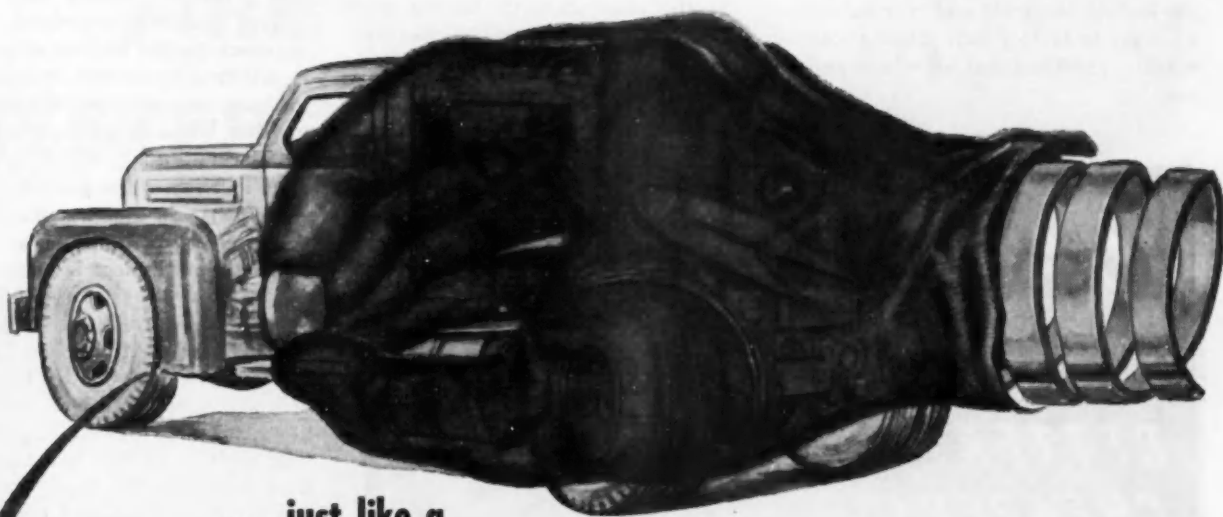
### JOHN WOOD COMPANY

Bennett Pump Division  
MUSKEGON, MICHIGAN

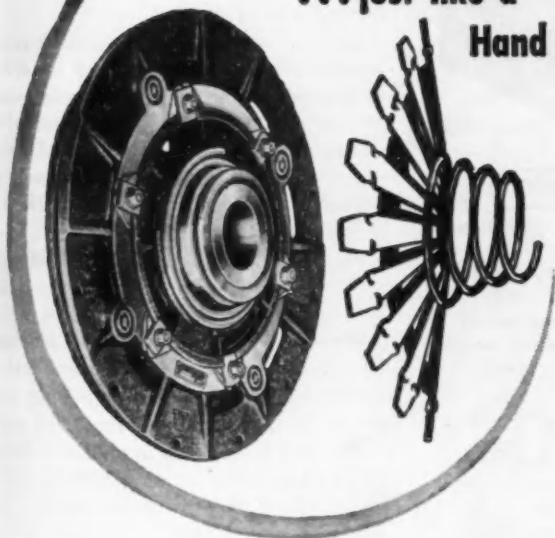
Offices in Principal Cities



# The SOFT Acting Clutch with the **SURE GRIP!**



... just like a  
Hand of Steel in a Velvet Glove



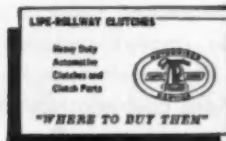
The hand of steel in the Lipe Clutch has 20 fingers that equalize the pressure of a single spring — assuring softer engagement and a positive grip.

## LIPE MULTI-LEVER CLUTCH

Lipe's soft engagement, positive grip Multi-Lever Clutch never needs babying. It engages smoothly — without grab, shock or jerk. All parts of the pressure plate touch at the *same instant* with the *same* pressure. No cocking — no point of high slippage and spot burning.

Result: *More mileage between tear-downs.*

For quick service on genuine Lipe parts, look for this ad in the yellow pages of the telephone directory in principal cities.



**Lipe - ROLLWAY CORPORATION**

Manufacturers of Automotive Clutches and Machine Tools  
Syracuse 1, N. Y.

# White's Payload Procurement Plan

Continued from Page 62

special wheelbase tractors dictated by bridge formula or other restrictions.

The chart on king pin load shows the wheelbase and fifth wheel position required to distribute properly a king pin load on the front and rear axle of a tractor to comply with existing state weight restrictions and/or axle capacities.

The trailer weight distribution chart is designed to show the relationship between the rear axle load and position, the king pin load and position, and the payload, for uniformly loaded trailer.

Another chart shows the landing gear position for a safe turning clearance with various fifth wheel positions. Data provides for a 2-in. clearance with

11.00-20 tires. A chart sets up proper dimension between cab and trailer for both oval and square nose trailers, for various fifth wheel and king pin positions. And a chart shows uniform payload to upset trailer on loading on level ground.

While the plan is too involved to discuss completely here (White salesmen and fleet representatives get a minimum of two weeks of intensive training in this procedure before they are considered qualified counselors), a general approach to the various steps involved in selecting equipment and distributing load may give the reader a clearer idea of what White is attempting to do.

Refer to Fig. 2, which is the work sheet and key to the project.

First step in making this evaluation is the selecting of state or states in which the equipment is to operate and to determine legal sizes and weights. White makes available a booklet entitled "State Motor Vehicle Laws..." for this information. In the example here the state is Illinois with a fixed gross weight of 59,000 lb. Single axle load limit is 18,000, and tandem axle limit is 32,000 lb. Legal length of a single unit is 35 ft, and overall length is regulated at 45 ft.

Step two consists of selecting a tractor that will meet requirements in terms of horsepower, weight, wheelbase—and determining its weight. The tractor with equipment and supplies outlined here weighs 9560 lb, and the trailer weight (which is obtained from specifications) is 9562 lb.

Step three is a matter of determining rear axle weight. In this case the dual axle can carry 32,000 lb. The gear tractor axle will carry 18,000, leaving 9000 lb to be carried on the front axle.

Step four consists of determining the weight of the tractor on the front and on the rear axle. This is obtained from the Weight Distribution Chart, a sample of which is reproduced in Fig. 3. The rear tare weight of the tractor is subtracted from total to get king pin load on front, and the rear tare weight of the tractor is subtracted from total to get king pin load on rear tractor axle. In this example 2850 lb available payload at the front is added to the 14,210 lb available on the rear axle and placed in the column headed King Pin Load.

Step five. Now, in order to get this king pin load distributed to the axles, we turn to the Distribution King Pin Chart which will determine the fifth wheel position on this particular wheelbase and with the oval nose trailer that has been selected.

In step seven, the trailer chart referred to above will also show payload, king pin location and rear axle trailer

(TURN TO PAGE 176, PLEASE)

*Clean* **METAL PARTS**

**FASTER!  
BETTER!  
CHEAPER!**

with a **CIRCO**



Since 1923

## VAPOR DEGREASER...

Available in all types, vapor, vapor-immersion, vapor-spray. Made in all sizes from small batch-type Degreasers to large custom-built monorail or cross-rod conveyor models.

**CIRCO VAPOR DEGREASERS ARE SUITABLE FOR OPERATION WITH EITHER PERCHLORETHYLENE OR TRICHLOROETHYLENE DEGREASING SOLVENTS. CIRCO DEGREASERS DISTILL AND RECLAIM THEIR SOLVENT AUTOMATICALLY. DUAL VAPOR LEVEL CONTROL.**

Sturdy, lasting construction is a feature of each CIRCO Degreaser. Interiors zinc metallized for protection against corrosion or available in stainless steel construction. New CIRCLAD Coating provides double corrosion protection.

WRITE FOR new CIRCO Degreaser Bulletin

Manufactured by

**TOPPER EQUIPMENT COMPANY**

24-36 MAIN STREET • MATAWAN, NEW JERSEY

Offices in principal cities

3045

MANUFACTURERS OF

PER-SOLV (Perchloroethylene) • CIRCO-SOLV (Trichloroethylene)

"CIRCO" VAPOR DEGREASERS • METAL PARTS WASHERS • DRYERS  
SOLVENT RECOVERY STILL • STEAM CLEANERS

- FEATURES:**
- Operates with either Trichloroethylene or Perchloroethylene
  - Reclaim own solvent automatically
  - Constant solvent level control
  - Positive dual vapor level controls
  - Automatic (shut off) safety controls
  - Eye level thermometers, gauge glasses
  - Clean solvent storage tanks
  - Leak-proof pumps
  - Economical—low operating cost
  - Low solvent consumption
  - Easy to clean and service
  - Sturdy, long-lasting construction

**CIRCO DEGREASING SOLVENTS**  
Solvents recommended for use in CIRCO Degreasers are:

**CIRCO-SOLV—(Trichloroethylene)**

**PER-SOLV—(Perchloroethylene)**

Both solvents—specifically manufactured for metal cleaning. Stabilized — non-corrosive. Best for all models.



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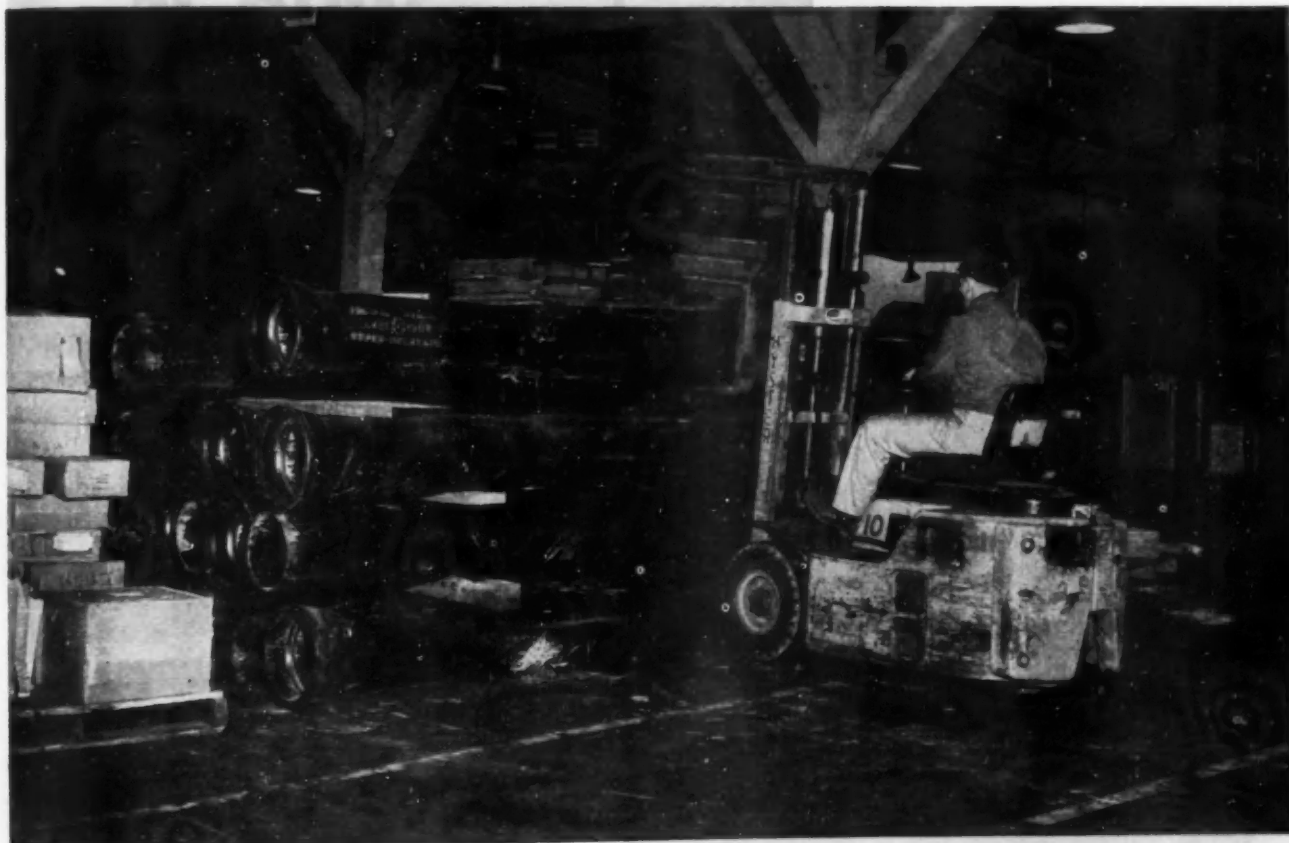
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September, 1952

# Why MOTOR FREIGHT FIRMS use HYSTER® 20 Lift Trucks



**INDOOR AND OUTDOOR EFFICIENCY.** The Hyster 20 (2,000 lb. capacity) works equally well on shipping docks, in terminals and warehouses. Gets in and out of tight spots or narrow passageways quickly, efficiently. Pneumatic tires. Trunnion mounted steering permits great maneuverability.

**GETS JOBS DONE IN A HURRY.** Hyster 20 is fast, stacks high, goes anywhere. Easy on floor surfaces, on the operator, and on loads. Simple to operate. Low maintenance costs. Used where the work load is greatest, Hyster cuts the heart out of materials handling costs—adds to net profits by saving time, money, manpower.

**SEE YOUR HYSTER DEALER** for a demonstration and list of owners. Or write for literature.

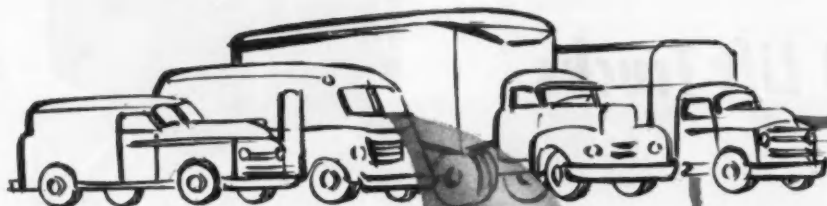


## HYSTER COMPANY

THREE FACTORIES

2902-01 N. E. Clackamas St., Portland 8, Oregon  
1802-01 North Adams Street . . . Peoria 1, Illinois  
1010-01 Myers Street . . . . . Danville, Illinois

# STOP SNEAK -that



## WHO IS SNEAK-LEAK?

He's the *anti-freeze* that leaks out through an improperly operating and leaky cooling system!

He's the money that leaks away because of improper selection of the type of anti-freeze best suited to your needs!

Here's how you can get rid of him . . . and save on operating costs 3 ways!

### STEP 1.

**Check the cooling system before you add anti-freeze.** Remember, most of

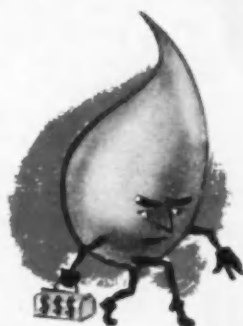
your anti-freeze losses are the result of a faulty and leaky cooling system. To assure proper engine performance, the system must be kept clean and in good operating condition.

So before cold weather sets in, check the system for rust and corrosion, leaky hose connections, head gaskets and water pumps. Check the fan belt, and thermostat to be sure both are in good operating condition. Preventive maintenance service will eliminate most of your anti-freeze losses.

# AK - LEAK

## at two-faced villain!

### STEP 2.



**Check again — periodically.** Follow through on your regular P.M. schedule with a periodic check-up of the cooling system. Check for loose connections and faulty hose and fan belts. This assures continued savings on operating costs.

### STEP 3.

**Choose the Du Pont anti-freeze — "Zerone" or "Zerex"—that best suits the needs of your fleet.**

You can rely on Du Pont anti-freeze—the standard for quality and dependability throughout the industry.

**"ZERONE"**—economy with safety. It is so efficient you need less . . . it costs you less. Use it in light- or medium-duty vehicles with low-opening thermostats (160°F. or below), and it will provide economical protection at average low winter temperatures and normal altitudes. There's a special Du Pont *chemical* rust inhibitor in "Zerone" that retards corrosion—gives long-time anti-rust protection—keeps a clean cooling system clean. And "Zerone" will not contribute to crankcase sludging.

\*REG. U. S. PAT. OFF.

**"ZEREX"**—the outstanding "permanent-type" anti-freeze. One filling lasts all winter in a properly operating cooling system. "Zerex" is made especially for use with high-opening thermostats (160°F.) and for heavy-duty service, or at high altitudes, and at temperatures lower than 30° below zero. A special *chemical* inhibitor retards rust and corrosion, provides long-time anti-acid protection. "Zerex" won't attack rubber, seep or creep from a tight cooling system, or clog radiators.

**FOR SAFETY, ECONOMY AND LESS "OUT-OF-SERVICE" TIME, FOLLOW THESE STEPS TO LOWER OPERATING COSTS. AND HERE'S ANOTHER TIP . . .**

Both "Zerone" and "Zerex" mix completely with water in all proportions . . . their special Du Pont chemical rust inhibitor will *not* separate out while standing. That means you can make a "pre-mix" of properly proportioned solution and have it constantly on hand for replacing losses and so prevent over-protection.



REG. U. S. PAT. OFF.

**150th Anniversary**  
BETTER THINGS FOR BETTER LIVING  
THROUGH CHEMISTRY





## Safe for Service?



## Don't You Believe It!

You couldn't see the cracks in this Diesel engine crankshaft—no human eyes could. Yet Magnaflux-Magnaglo spotted them instantly during overhaul—showed them up with glowing indications as unmistakable as a flare on a dark highway.

This crankshaft would almost certainly have failed in service . . . with probable destruction of much of the engine, or even loss of equipment and cargo due to accident on the road.

Inspection with Magnaflux prevents such needless loss for truck and bus companies. Finding invisible cracks in crankshafts, connecting rods, engine blocks, gears, spindles, etc., it reduces road failures; cuts repair and maintenance expense; and insures safer, more dependable operations. Inspection with Magnaflux is a routine but vital part of every overhaul.

### SEE YOUR MAGNAFLUX EQUIPPED SHOP

Next engine or truck you have overhauled, make sure the job includes inspection with Magnaflux—available through hundreds of Magnaflux-Licensed overhaul shops or Magnaflux' own laboratories. Write us for the location of the one nearest you.

How inspection with  
**MAGNAFLUX**  
can stop costly failures



Reg. U. S. Pat. Off.

# MAGNAFLUX



**MAGNAFLUX CORPORATION**

5908 Northwest Highway • Chicago 31, Illinois  
New York 36 • Cleveland 15 • Detroit 11 • Dallas 9 • Los Angeles 58

### Trailer Becomes Hospital

A demonstration at Youngstown, Ohio, showed how a tractor-trailer combination could become a field hospital. Civil Defense officials participated in the change-over using this donated Fruehauf trailer. It was converted into a full, mobile, field hospital unit with a complete staff of doctors, nurses and two "patients" to lie on the normal-sized operating and examination tables.

### White's Plan . . .

Continued from Page 172

location. [This chart will also show trailer weight which is added to the tractor weight, determined previously, to give us total tare weight—step six.]

Step eight consists of checking the payload to see if we are within limits.

Step nine is a check for landing gear position via the charts set up to show safe turning dimensions.

Step ten is a check of cab to axle dimension for jack-knifing.

Now, in step eleven we figure over-all length of this combination to see that it will fall within state limits.

Finally, in step twelve we check the law book against the "L" dimension (if the state is a bridge formula state).

Note that in this procedure requirements have been set up for a payload that is legal and is as close to perfect as is possible. There is no overloading of axles, but every axle is doing its part. This guarantees increased revenue with a combination that will do the job that is required. This procedure, applied to any fleet vehicle will show whether that vehicle is doing all it should or just what revisions should be made to make it so.

White representatives are prepared at this point to move into any fleet with this Modernization Plan, in a move to assist the operator in selecting or revising equipment. The charts and the plan itself is copyrighted, but the company will make available full information to any fleetman or operator upon request.

**END**

Please Resume Reading Page 63

"Herman," said the Shop Foreman to the young apprentice mechanic, "there'll be a vacancy here on the service line soon, and I'm thinking of giving your twin brother the job."

"My twin brother?" exclaimed Henry.

"Yes, the one I saw watching the ball game yesterday while you were at your aunt's funeral," exclaimed the Shop Foreman.

## nes Hospital

Youngstown, Ohio, or-trailer combina- a field hospital. als participated in ing this donated was converted into hospital unit with octors, nurses and e on the normal- xamination tables.

d from Page 172

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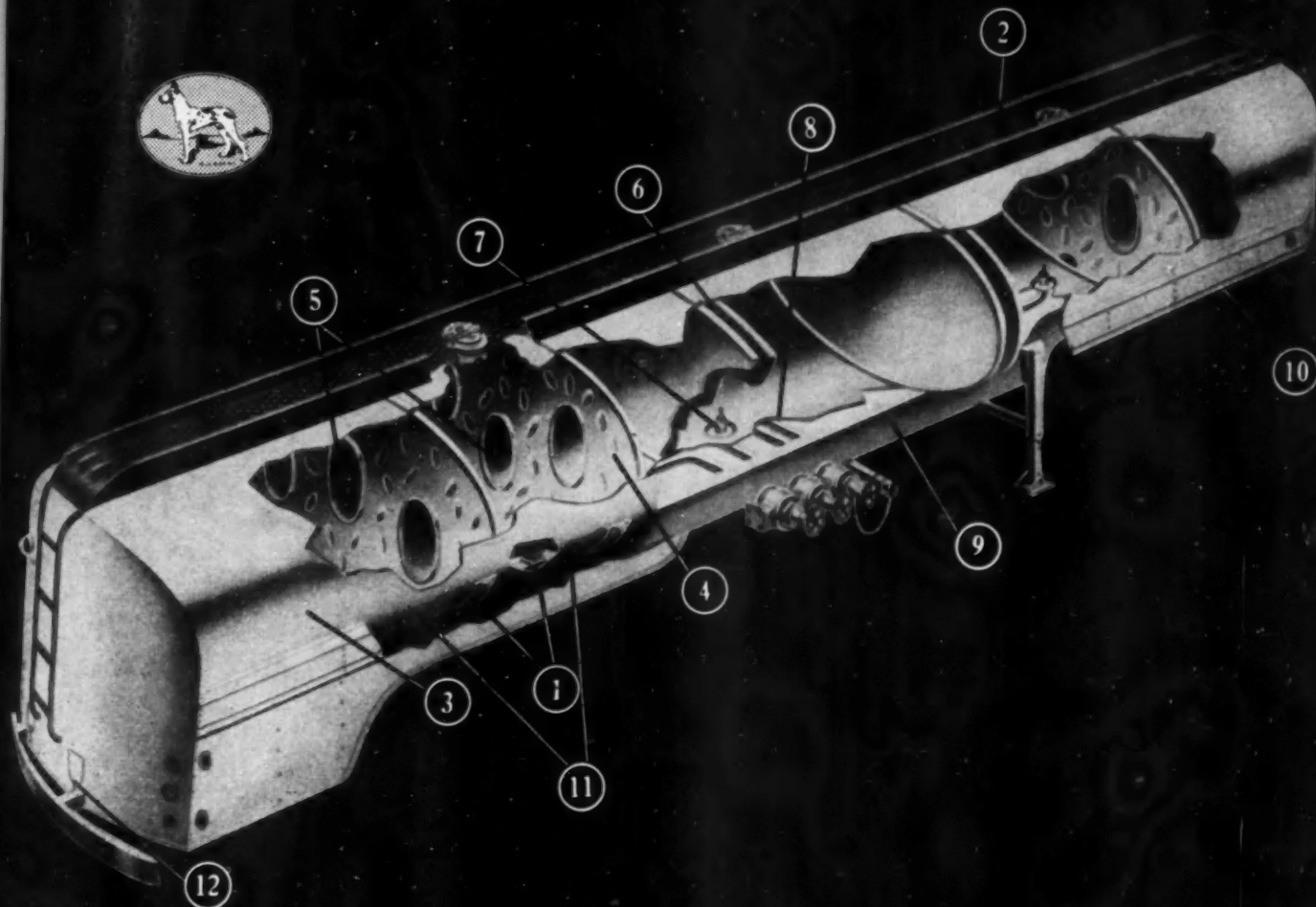
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ember, 1952



## Check these "inside facts" that prove the GREAT DANE your best TANK value.

- ① "SPRING-WELD" Exclusive welding absorbs stresses.
- ② CATWALK is part of the tank, not an accessory; makes tank more rigid.
- ③ HI-TENSILE STEEL TANK weighs less, provides added strength and safety. Exceeds I. C. C. specifications.
- ④ DIMPLED BAFFLES add much greater strength to baffles.
- ⑤ STAGGERED BAFFLE HOLES. Another GREAT DANE first that throttles ramming effect of surge. Makes tank safer.
- ⑥ ⑦ ⑧ PIPING of thin-wall steel-tube with large radius bends, vibration-proof connections. Available with I. C. C. emergency valves or with removable elbow.
- ⑨ SUB-FRAME of hi-tensile steel provides greater strength, less weight. Protects tank from all pulling and braking stress. Carries tires and landing gear. Greatly lowers maintenance costs.
- ⑩ ⑪ ⑫ PLUS FEATURES. Fifth wheel mounted to sub-frame eliminates stress on tank. No wheel pockets over undercarriage. Hose carriers easily accessible. The famous GREAT DANE Glide-Ride Tandem Assembly.

See your GREAT DANE dealer today for literature and prices!

**GREAT DANE** Trailers  
SAVANNAH, GEORGIA

**Cutting fleet costs on**

# **Operation** **Pipe Line**



**STANDARD OIL**

Experienc

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Experience of the hard-working  
G. G. Griffis Construction Co. shows  
benefits you can get with . . .

## STANOLUBE HD-M

REG. U. S. PAT. OFF.

# Motor Oil

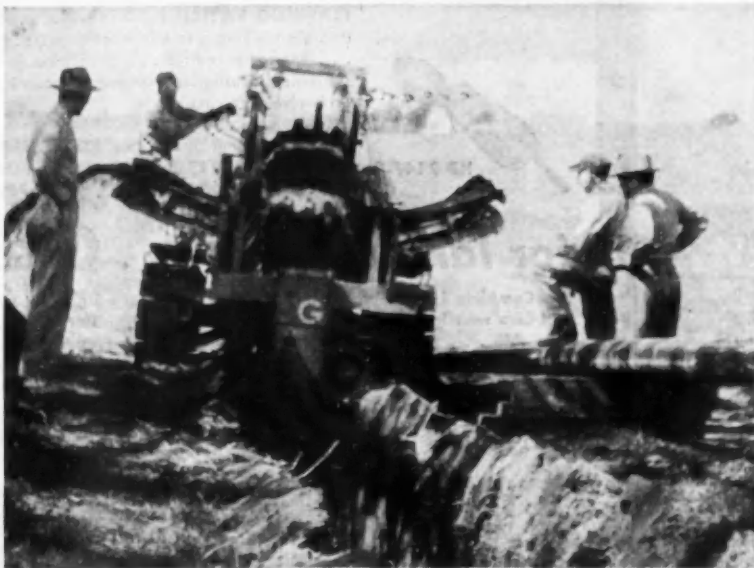
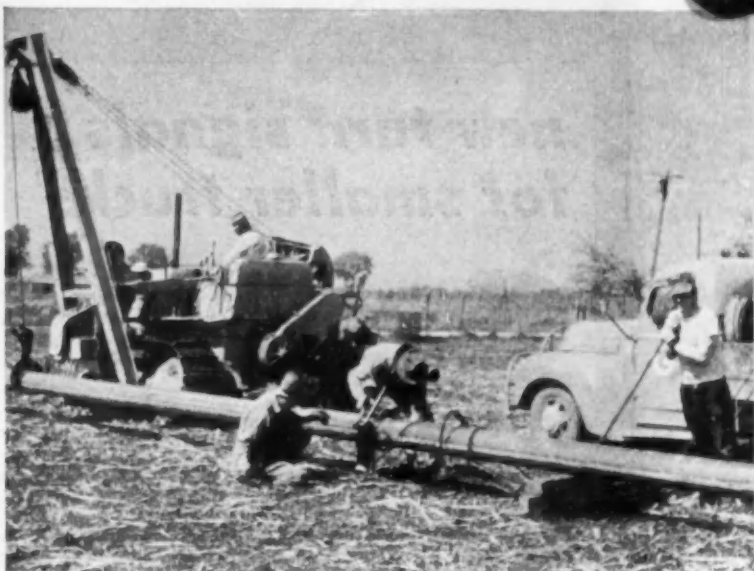
. . . on tougher fleet jobs.

The G. G. Griffis Construction Company, Tulsa, Oklahoma, has a far-flung reputation for tackling the tough jobs and getting them done on schedule. Sparking this organization is its president, Mr. G. G. Griffis who is shown above (left) with Mr. J. R. Welsby of Standard Oil. With 33 years pipe lining experience in all 48 states, Mr. Griffis knows how to get the most out of his equipment. He has this to say about his experience with STANOLUBE HD-M, Standard Oil's new and better heavy-duty motor oil:

"We push our engines hard on all jobs, and they must be able to take punishment. With your STANOLUBE HD-M we have not had to worry about any breakdowns due to faulty lubrication, and that's important when you've got schedules to meet. What's more, our engines have stayed cleaner and in better shape which has cut down overhaul bills."

Make the experience of Mr. G. G. Griffis your basis for trying STANOLUBE HD-M. This new and better additive-type lubricant, combining more effective detergent-dispersant action with greater oxidation stability, will keep deposits and wear at a minimum in all types of fleet engines under the toughest of operating conditions.

Your nearby Standard Oil office and warehouse stocks STANOLUBE HD-M for fast local delivery. Here, too, is headquarters for your Standard lubrication specialist. Call him today. Or write: Standard Oil Company (Indiana), 910 South Michigan Ave., Chicago 80, Ill.



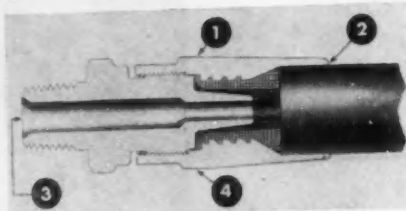
**STANDARD OIL COMPANY (Indiana)**

## New Products

Continued from Page 76

### P114. Reusable Couplings

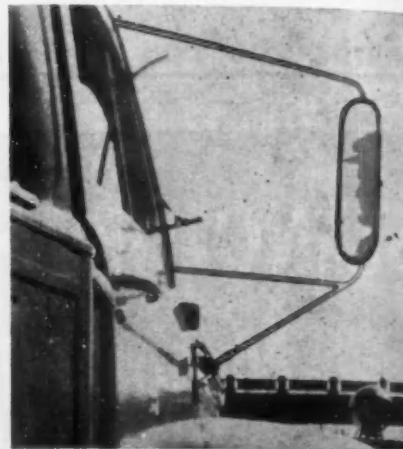
Designed to hold coupling to hose by gripping wire braid between shoulder of stud and shelf of sleeve, a new line of flexible hose line couplings is being marketed by Lincoln Engineering Co., St. Louis, Mo. No special tools are required for assembly. Bell-shaped counter bore of sleeve guides flared



hose end into position, where the hose end is completely confined by metal. Couplings are precision machined from steel bar stock and zinc plated. They can be detached and reused.

### P115. Mirror

Designed with a tipping adjustment for eliminating "blind spots" along sides of buses and trucks, a new rear view mirror is being produced by Kampa Co., Minneapolis, Minn. In addition to this feature, it is hand adjustable to any position, including in



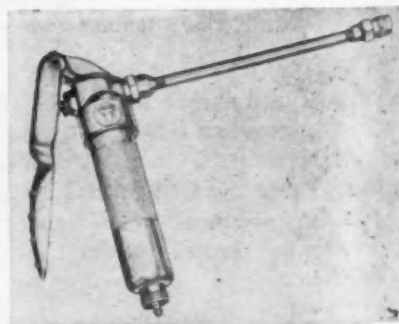
and out, complete circle and vertically. Of rigid tubular construction, mirror is mounted to fold back against the cab upon impact from either direction.

### P116. Muffler

Using a perforated straight-through tube surrounded by a "tone well," a new all steel, custom muffler is being produced by Maremont Automotive Products, Inc., Chicago, Ill. Tests on the model showed a 17 per cent cut in back pressure.

### P117. Lubricating Gun

Providing pressures up to 10,000 psi, a hand operated lubricating gun developed by Lincoln Engineering Co., St. Louis, Mo., weighs 2 lb and has a one-hand push action. Said to handle all pressure lubricants in any weather, it

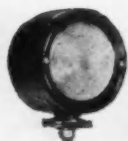


has a 2½-oz capacity and a hydraulic coupler extension for hard-to-reach fittings. Refills by engaging filler fitting on gun with control valve on hose from power or manually operated pump. It is cleaned by removing one outlet check and has no packing to replace.

(TURN TO PAGE 182, PLEASE)

## for greater safety

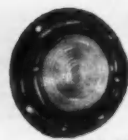
### new turn signals for smaller trucks



KD 757  
KD 758

**Class "B"** Consistent with its 35 year pattern of providing The Complete Line of Saftee Products, K-D has engineered this new line of Turn Signals with glass lens for all vehicles not requiring Class "A" Signals. Objectives accomplished: economy, maximum visibility, maximum maintained efficiency. Sturdy heavy-duty bonderized steel construction. Black enamel finish. Single contact 21-cp bulb. Lites and kits available for six or twelve volt circuits.

**SINGLE FACE KD 757 . . . RED OR AMBER** { Wire extending through hollow stud provides easy fender mounting.  
**DOUBLE FACE KD 758 . . . RED-AMBER**



KD 759

**FLUSH MOUNTING KD 759 . . . RED OR AMBER.** Panel opening 3¾" . . . flange diameter 5½" . . . bolt hole circle 4¼" . . . depth inside flange 1½".

**FLASHING SWITCH KD-714F-2 . . . built-in flasher . . . audible clicking when in operation . . . flashing indicator lite . . . finger-tip control . . . three-wire circuit and built-in fuse simplifies installation. Universal mounting. Available for six or twelve volt circuits.**



KD 714F-2

**KITS KD 760** includes two KD757 RED, two KD758 RED-AMBER, two KD1378 Brackets, one KD714F-2. **KD 763** includes two KD 758 RED-AMBER, two KD 759 RED, one KD 714F-2.

### for larger trucks . . . Class "A"

The Complete Line embraces the new Class "A" Turn Signals with Sealed Beam Bulbs and also with Reflector and Bulb Lites. Sealed Beam: Single Face KD 787 . . . Double Face 788 . . . Flush Mounting KD 789. Reflector and Bulb: Single Face KD 777 . . . Double Face 778 . . . Flush Mounting KD 779. Experimental designs convinced us that our two complete reflector, two bulb KD 778 Turn Signal produced 40% more light than our design using two reflectors with a single bulb. No sun or headlight glare . . . better on and off contrast. Assures ultimate turn signal protection.

PROTECTED BY  
**BONDERITE**  
CORROSION RESISTANT

## K-D LAMP COMPANY

1910 ELM STREET • CINCINNATI 10, OHIO  
WAREHOUSES: CHICAGO • LOS ANGELES • NEW YORK



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(PLEASE)

tember, 1952

# VELVETOUCH LASTS LONGER



**... because it's All-Metal**

Designed especially for use wherever frequent starts, stops and over-loading cause excessive clutch plate wear... experienced operators replace with Velvetouch. Because Velvetouch lasts longer! Being all-metal, Velvetouch clutch plates run cooler... require fewer adjustments... give you added miles of smooth, trouble-free service. For more facts about how Velvetouch can cut costs, contact your jobber, our nearest branch... or The S. K. Wellman Co., 1374 E. 51st St., Cleveland 3, Ohio.



**Velvetouch**

## THE S. K. WELLMAN CO. WAREHOUSING CENTERS

ATLANTA—119 14th St., N. E.  
Atlanta 5, Georgia

CHICAGO—1500 South West-  
ern Ave., Chicago 8, Illinois

CLEVELAND—1392 East 51st  
St., Cleveland 3, Ohio

DALLAS—3407 Main Street,  
Dallas 1, Texas

LOS ANGELES—1110 S. Hope  
Street, Los Angeles 15, Calif.

PHILADELPHIA—1545 West  
Belfield Ave., Philadelphia, Pa.

PORTLAND—636 N. W. 10th  
Ave., Portland 9, Oregon

SAN FRANCISCO—424 Bryant  
Street, San Francisco 7, Calif.

TORONTO, ONTARIO  
The S. K. Wellman Co. of Canada,  
Ltd., 2839 Dufferin St.

EXPORT DEPARTMENT—  
8 So. Michigan Ave.  
Chicago 3, Ill., U. S. A.

WASHINGTON OFFICE—  
1101 Vermont Ave., N. W.  
Washington 5, D. C.



## A SATISFACTORY TANDEM MUST MEET THESE REQUIREMENTS

- 1 Keep axes parallel with each other and to the frame under all load and road irregularities.
- 2 Provide for maximum flexibility.
- 3 Completely absorb axle torque resulting from starting and stopping inertia.
- 4 Permit use of springs adequate to carry maximum loads; eliminate need for over designed springs.
- 5 Provide maximum strength without excessive weight.

## HENDRICKSON MEETS THESE REQUIREMENTS



**HENDRICKSON  
TANDEM**

"first Specify Tandems then  
Specify Hendrickson Tandem"

**HENDRICKSON MOTOR TRUCK COMPANY**

8001 West 47th Street • Lyons (Chicago Suburb) Illinois

## New Products

Continued from Page 180

### Late Product Flashes

Anti-rust paint in aluminum finish that can be applied by brush or spray right over rust without priming, scraping, wire brushing or sand blasting is reported by the Paint Corporation of America, Cleveland, Ohio.

Brake blocks with a corrugated surface provide non-abrasive cleaning of brake drums without increasing wear and promoting greater heat dissipation. Gatke Corp., Chicago, Ill.

Clearance light, requiring a 1 in. hole for surface mounting with a 3 in. diam. face, is available with red, amber, green or clear plastic lenses in a cast aluminum alloy body. Utilizing a special composition ring between the lens and the body, the lens can be removed without a screwdriver or other special tools when bulb replacement is necessary. Betts Machine Co., Warren, Pa.

Fire extinguishers in 1 and 2 qt sizes making possible one hand operation through the use of pressurized nitrogen are of all brass construction with the entire valve assembly and pick-up tube unscrewing from the shell as a unit to simplify inspection, cleaning and recharging. Fyr-Fyter Co., Dayton, Ohio.

Oil filter replacement cartridges in the following models have been announced by Fram Corp., Providence, R. I.: C-231 PL for Purolator P-40, C-233 for Mopar 1121694, C-199 for Walker RC-30, C-198 for Mack 236-GB-220, C-166 for Oliver K-5507 and C-165 for Oliver M-5507.

Carburetor and metal cleaner that is a non-caustic, single-phase, cold-dip, emulsion cleaner has been developed by Petroleum Solvents Corp., New York, N. Y.

Preservative oil, serving as both a lubricant and a preservative, eliminates the need for two separate products in the storage or shipment of internal combustion engines and subsequent preparation for service. Produced by Texas Co., New York, N. Y.

Spark plug gap gaging and setting tool operates by setting the proper gage between the center and ground electrodes and tapping the handle of the tool driving the blunt-tipped device down on the electrode and setting the gap. Blue Crown Spark Plug Co., Chicago, Ill.

Waterproof sandpaper of new design for the automotive repaint trade only will be manufactured by the Behr-Manning Corp., Troy, N. Y.

Block and head sealer, poured through the water inlet on top the cylinder head, is a liquid repair material for sealing inside cylinder cracks, split valve ports and cracks in water jackets and cylinder heads, produced by Permatex Co., Brooklyn, N. Y.

END

Please Resume Reading Page 78

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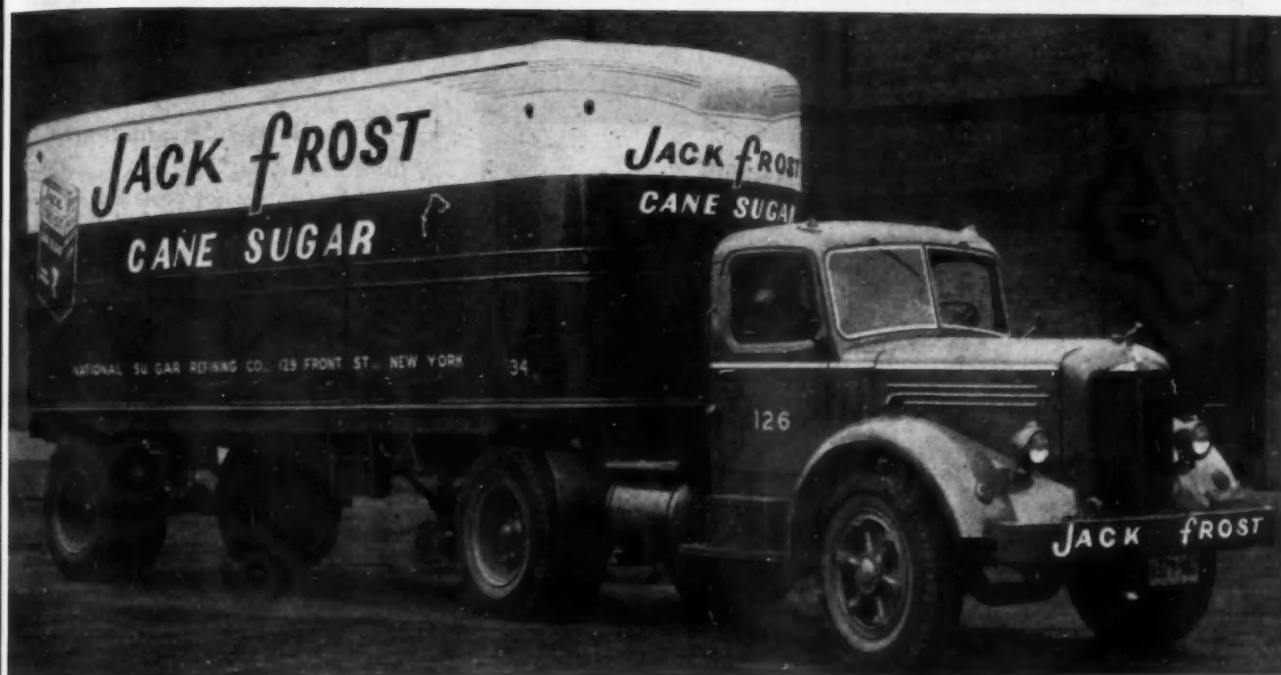
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COMMERCIAL

# "Purolators are standard equipment on the Jack Frost Fleet!"

... says Mr. Peter N. Peterson  
Superintendent of Trucking  
National Sugar Refining Co., New York, N. Y.



## Listen to an expert's opinion on Purolator performance:

"We use Purolator Micronic Oil Filters on all our vehicles—trucks and passenger cars, too. They are the best we have found yet and we are convinced that our engine maintenance costs are substantially lower because of the continuing excellent performance of Purolator filters."

These are the words of Mr. Peterson, a fleet-maintenance specialist with many years of experience in heavy vehicle operation. His observations are based on actual filter performance comparisons, made during hundreds of thousands of miles of actual fleet service. Like thousands of other fleet operation supervisors throughout the nation, Mr. Peterson has found that Purolator—and Purolator alone—delivers the top performance that gives lasting engine protection.

If you are a fleet owner or operator, you cannot afford to ignore these filter facts! You are invited to test and compare Purolator performance for yourself. Our Engineering Department will gladly help you prove to your own satisfaction that there is no other oil filter capable of giving you better engine protection than Purolator. Simply write!

## ONLY PUROLATOR MICRONIC FILTRATION GIVES YOU ALL THESE EXTRAS—

- ✓ UP TO TEN TIMES the effective filtering area of old-style filters.
- ✓ MAXIMUM EFFICIENCY: Purolator Micronic\* element traps particles down to submicrons small (.0000039 in.)!
- ✓ MAXIMUM FLOW RATE: The amazing efficiency of the Purolator\* Micronic element assures highest filtration rates and long service life.
- ✓ WILL NOT REMOVE OR ABSORB ADDITIVES: With Purolator Micronic filtration you keep all the oil quality you pay for!

PUROLATOR PRODUCTS, INC.  
Rahway, New Jersey and Toronto, Ontario, Canada  
Factory Branch Offices: Chicago, Detroit, Los Angeles

\*Reg. U.S. Pat. Off.



# Management—Key to Driver Testing

Continued from Page 53

## 4. Morale—

Drivers in the high units seemed to be better adjusted to their jobs and indicate more satisfaction with the total situation than those in the low units.

## 5. Maintenance and Accident Reporting—

a. High units performed a greater percentage of 30-day maintenance

checks, on a more routinized basis than did low units, without waiting for an additional thousand miles to be put on the vehicle. Low units seemed to depend more upon the six months check to meet their preventive maintenance requirements.

b. The high units repaired a greater percentage of their vehicles for

wear-and-tear defects than did the low units.

c. High unit drivers reported malfunctions and defects, in general, observed by them during operations to a greater degree than did the low unit drivers.

d. No differences were found between high and low units with regard to accident reporting practices.

## 6. Use and Assignment of Vehicles—

a. High units used their vehicles, in general, more frequently and more regularly than did the low units.

b. High units tended to follow more closely than low units an administrative pattern of assigning each driver to a particular vehicle.

## Brody Test Evaluation

FROM the foregoing, it is hoped that the fleet supervisor or safety director can compare the practices followed in his own fleet and determine for himself which factors of management should receive most careful attention.

As a further guide to the determination of which tests pay off, an extensive research study by Dr. Leon Brody\* reached these specific conclusions:

1. *Age, Sex, and Socio-Economic Status*, per se, bear little relation to the safety of an individual as a driver.

2. *Reaction Times* has been disproportionately emphasized by comparison with how an individual will respond in a tight situation.

3. *Actual Driving Skill* is not a reliable prediction, since accident-prone drivers give performances generally similar to accident-free drivers.

4. *Knowledge of Driving Principles and Practices* is no guarantee of compliance, and does not characterize the accident-free driver from his undesirable counterpart.

5. *Attitudes* are important; they govern observance of regulations and obligations.

6. *Personal Maladjustments* appear responsible for numerous traffic accidents.

7. *Lack of Hearing*, although an obvious handicap, has not been identified as rendering the individual incapable of driving safely.

8. A high degree of *Intelligence* does not seem essential for safe and skillful driving, although obviously an idiot cannot be trusted with a car.

9. Educational programs stressing the psychological and physiological *Effects of Drinking Alcohol* are desirable.

10. *Defective Vision*, in any of its (TURN TO PAGE 186, PLEASE)

\* "Personal Factors in Safe Operation of Motor Vehicles" published by the Center for Safety Education, New York University.

**Weather Forecast —**  
**... SNOW AND FREEZING RAINS . . . .**  
**... BAD DRIVING ON ALL ROADS**

**HOW ARE YOU FIXED FOR SANDERS?**



Think of the value of your shipments . . . how important it is to maintain schedules . . . the terrific cost of accidents. And compare these with the small cost of Lintern Sanders to insure over-the-road safety in slippery, icy weather.

**LINTERN SANDERS**

come in both "Air-Trac" (air operated) and "Vac-Trac" (vacuum operated) types. They provide traction regardless of weather conditions. Nozzles are patented, weatherproof—sure operation in all kinds of weather. Proved throughout the years . . . thousands in use.

Ask your distributor for LINTERN SANDERS or write us direct.

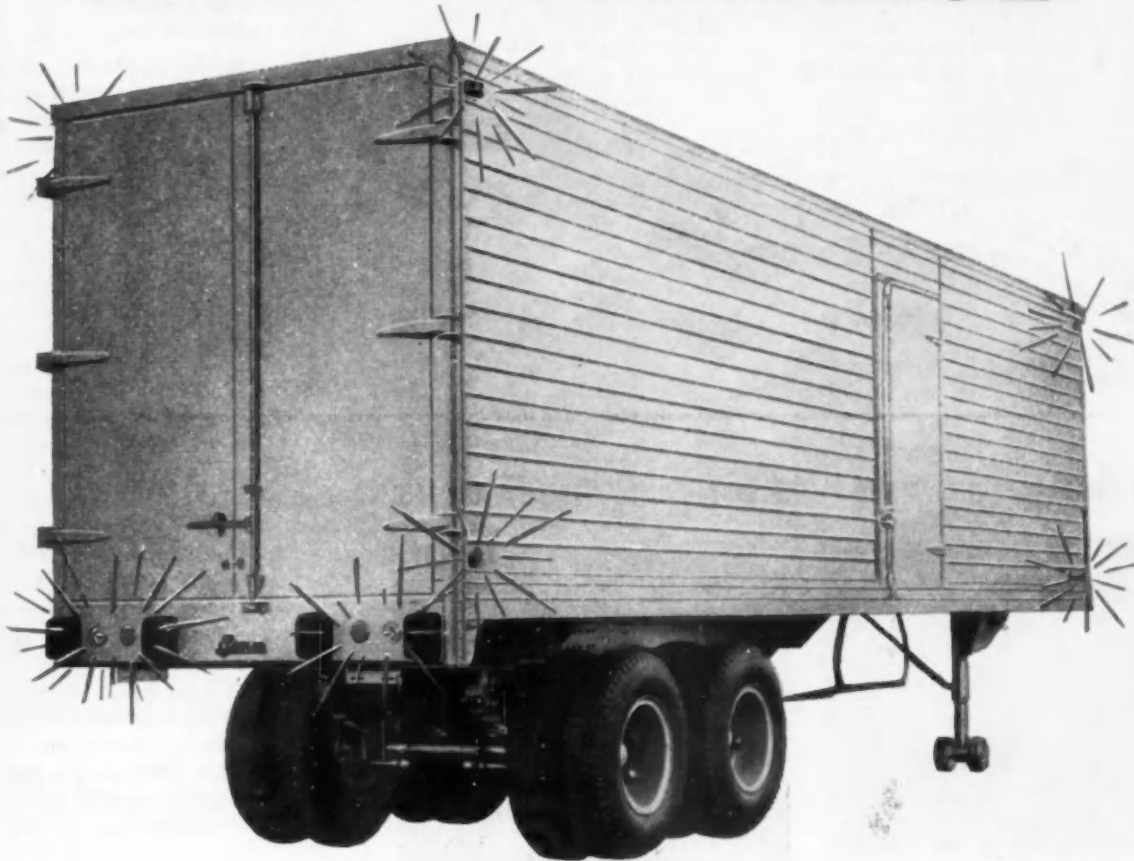


**"AIR-TRAC"**  
 Air-operated  
 Model 50-A

**THE LINTERN CORPORATION**  
 P. O. BOX 428 • • PAINESVILLE, OHIO



# Brown standard conduit wiring gives LIGHT INSURANCE



## Still another step forward in trailer manufacture

**LIGHT** insurance that means *Safety* — Brown Aluminum Trailers' externally accessible conduit wiring system has given leading trucking companies this protection since 1950. Yes — Brown Trailers were first in the field with this progressive step in trailer design.

### These Features Give Brown Trailer Operators LIGHT INSURANCE

1. Externally accessible . . . there is no necessity to unload or shift cargo in order to reach any point on this wiring system.
2. Wires are impervious to certain external damage such as from rocks, rubbing, etc.
3. The wiring installation is extremely rigid, held firmly in place with metal brackets.
4. Conduit types are both BX and thin-walled rigid metal. Wires are safely and securely enclosed.
5. Wires are all color-coded for quick and easy identification.

6. Wiring is waterproof under every weather condition.

7. Because of the high degree of efficiency in this enclosed electrical system, repairs are few and far between and maintenance costs are amazingly low.

*Look to Brown for "firsts" in the field of trailer design.*

✓ Lighter Weight

✓ Bigger Payloads

✓ Increased Profits

Toledo • Spokane • Reading  
Distributors in principal cities

## Driver Testing

Continued from Page 184

several aspects, may help cause accidents; it appears that deficient side vision is a more prevalent accident factor than any other visual trait. The visual ability is directly dependent on *Attention*, if it is to be fully and effectively employed.

11. *Low Systolic Blood Pressure* may tend to be symptomatic of "accident-proneness."

12. *Illnesses and Diseases* may impair ability to drive safely.

### A Too Practical Test

UNDOUBTEDLY some readers, along about here, will be saying words to the effect that this is all well and good but these professional researchers are too high-brow for me. The reaction is a completely natural one. So I would like to add a brief story about a *layman's* approach to testing the tests.

A few years ago in a midwestern state an enterprising young man, concerned with traffic safety and driver testing,

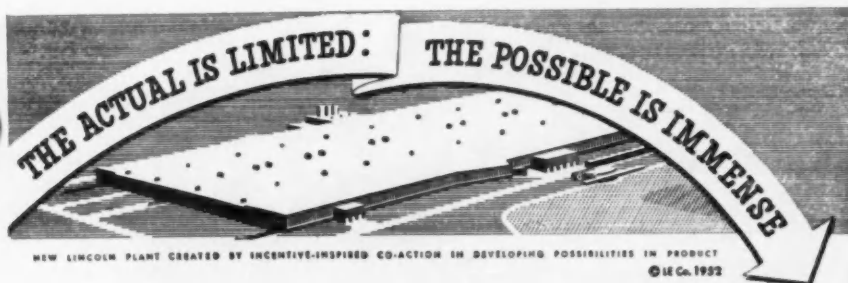
strongly questioned the validity of the conventional testing procedures whereby driver licenses were issued. He reasoned that test findings derived from apparatus or pencil-and-paper tests may not be truly representative of the individual's response to an emergency situation while driving. So he evolved a test—a test to supplant all tests—one that would unmistakably predict the performance of the unsuspecting examinee. (And one which proved successful beyond his wildest dreams.)

The scheme appeared simple and fool-proof. An open stretch of four-lane highway was selected for the test site. It had wide, level shoulders, with no physical hazards no distractions. A large semi-trailer outfit was properly parked off the road, on the shoulder, with three red flags flapping their warnings in the position prescribed by law. To the passerby that was the scene—simply a parked semi-tractor rig, off the pavement, the usual red flags, with nothing unusual to be seen. But what the passerby couldn't see, nor suspect, was carefully hidden in front of the tractor; an inclined plank so arranged that it would permit a boy-sized, lifelike, straw-filled, dummy poised on roller skates—to roll briskly down the plank at four miles per hour directly into the path of any passing vehicle. To insure accuracy and fairness the dummy was released by mechanism controlled by an "electric eye" beam across the road and 190 ft to the rear. A vehicle interrupting the light beam would be immediately confronted by the dummy who would dart into the road, thus precipitating a most valid test!

The test findings, limited as they were by the abrupt termination of this highly predictive examination, seem conclusive. They clearly corroborate the contention of its designer that the average driver on the highway, despite his having demonstrated ability by passing the required state driver's tests, has not been measured in terms of his readiness to cope with actual driving emergencies. Clearly proven was the suspicion that the average driver possesses little more than the legal permission to drive, as established by unrealistic tests given on apparatus or with pencil and paper in the sanctuary of a quiet test station.

What happened? One hundred and thirteen unsuspecting drivers of cars and trucks were subjected to the test, before their mass indignation caused its termination—forever! Eight out of ten dramatically "failed the test—either by colliding with the dummy or by swerving off the road into the fields on one side or the other—or by swerving

(TURN TO PAGE 188, PLEASE)



## Simplifies maintenance to cut costly man-hours



Fig. 1. Alters Frames—Changes in frames are speeded with "Fleetwelder's" faster, easier welding. Top quality welds in all positions assure dependable workmanship at lowest shop cost.



Fig. 2. Reinforces Trailers—Where specially heavy loads must be handled, channels are welded to frame and trailer body. Enables carrier to haul heavier cargo. Increases profitable life of equipment.

## HERE'S MORE RANGE TO DO MORE WORK

### ... and at less cost

Selects any welding current from 20 to 220 amps.

"Fleetwelder's" dial-tuning gets the exact amps for every job. Handles  $\frac{3}{4}$ " to  $\frac{1}{4}$ " electrodes for light body work and heavy frames. Non-sticking arc eliminates arc striking difficulties.

Each time the electrode touches the work the Arc-Booster starts the arc... automatically. Instant penetration with the Arc-Booster eliminates cold overlaps—assures top-quality welds, takes less skill to operate.

Compare the price! Built of rugged, industrial-type construction. Has ample reserve for heavy welding... yet sells for less than other arc welders of similar capacity.

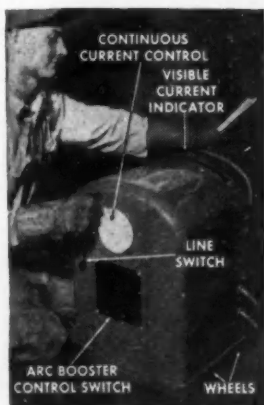


Fig. 3. "Fleetwelder 200 AC"—Lincoln AC arc welder with Arc-Booster, simplifies arc welding. Conforms to NEMA standards. Easy to install. Operates on single phase current.

Send for free Bulletin 1301 on "Fleetwelder 200 AC", write Dept 324,

## THE LINCOLN ELECTRIC COMPANY

CLEVELAND 17, OHIO

The World's Largest Manufacturer of Arc Welding Equipment

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## HAULING OUT THE HEAVYWEIGHTS . . . another tough job that demands **AMERICAN BOSCH** performance

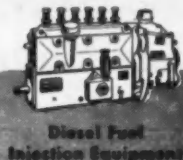
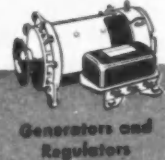
Hustling out the big butts is a mighty tough job—but giant Diesel logging trucks take it in stride. These heavyweight haulers rumble over specially-built logging roads, daily shouldering loads that may scale fifty tons or more. Plenty of dependable power's a "must"—and that's why American Bosch products are on the job.

Reliable, precise fuel injection is one big reason for the sweeping success of the modern Diesel engine. And American Bosch has long been the leading supplier of fuel injection systems to Diesel engine man-

ufacturers. That's because American Bosch Diesel injection pumps and nozzles—although built to amazingly fine tolerances—provide long-lived, economical performance in the severest service.

For over forty years, American Bosch has maintained a unique reputation for advanced design, precision manufacture and widespread, thorough service. Continuous research in the automotive, aviation and Diesel fields helps to keep it that way. American Bosch Corporation, Springfield 7, Massachusetts.

# AMERICAN BOSCH





## Driver Testing

Continued from Page 186

and hitting—the parked truck! Few of those who “took” the test expressed kindly appreciation for this cause of pure science. A few especially stubborn die-hards insisted on a second trial at the same speed as their first. Without exception—alerted, expectant and determined—they triumphantly

“passed” the repeat examination with a healthy margin to spare.

Unfortunately such “seconds” are not offered to the principles involved in actual accident situations. While this type of test appeared conclusive in predicting safety, it obviously possessed certain disadvantages (principally vehicles wrecked or stuck in adjacent fields, or drivers so frightened and indignant that temporarily they were in no condition to continue driving, even if the vehicle survives the test without mishap. This test cannot be recommended.

## How About Driver Tests?

WHAT of driver tests? Are they of no value? Unquestionably they are a most valuable factor in the accident problem. There are increasing numbers and types of driver tests being made available, and many of them are exceedingly useful. A weakness that seems universal is that of the various predictors which have been devised including psychophysical tests and driveometers, very few have been validated against an acceptable criterion.

A good many variables, according to a Purdue University report, have been found to possess little direct relationship to safe driving, although they repeatedly appear in most batteries of tests.

Color vision, simple reaction time, visual acuity above a certain level, and hearing, may prove valuable training data, but have not been proven useful predictors of safety. On the other hand, certain other variables appear highly desirable, although the difficulty of constructing suitable measuring instruments has slowed their advent. Among them are:

1. Attitude as related to safe driving.
2. Other personality characteristics as related to safe driving.
3. Driving judgment.
4. Perseverance.

## Conclusions

WHETHER measured in terms of insurance premium rates, damage to property, or injuries to persons, the cost of accidents increasingly justifies our seeking to develop a more thorough understanding of a driver's mental, physical and emotional characteristics as related to safe operation. Progress and understanding in this area will make it possible for the supervisor to make an effective contribution to accident prevention. In the final analysis the driver's test is merely an effort to gain an understanding of the individual, as well as his background and environment, and identify those weaknesses which may respond to training or other supervisory guidance.

Unfortunately many fleet supervisors employ driver tests solely as selective devices, presuming that they will unerringly identify and separate those who are hopelessly inept at driving from those whose natural talent would insure peak performance—without further supervisory effort. Those who most effectively employ driver tests use them as sounding boards not only of aptitudes, but primarily as indices of training needs.

END

Please Resume Reading Page 54

**Now!**

Complete Line of

# Snugl

WHEEL BALANCING WEIGHTS  
for TRUCKS and BUSES





**GET IT FROM  
YOUR JOBBER**

T.V. HEAVY  
DUTY THIN

R & S REGULAR  
TRUCK  
Fits about 80%  
of all Truck Rims

**“STANDARD OF THE TRADE”**

Snugl Heavy Duty Truck Weights are especially designed to give

- EASIER APPLICATION
- BETTER FIT
- BETTER BALANCE

The exclusive Dove Tailed Steel Spring Clip holds weight firmly to rim with a Bull Dog grip . . . the beveled edges prevent clip from gouging tire.

When you buy Snugl you can be sure of getting the finest Wheel Balancing Weights on the market . . . designed right and made right to give better balance and better fit. The name Snugl (Registered Trade Mark) on every weight is your guarantee of complete satisfaction.

**FOR PASSENGER CARS**

Write for illustrated catalog sheets of Snugl Wheel Balancing Weights for Passenger Cars, Trucks and Buses . . . also name of your nearest Jobber.




Special Thin K & L Flange Weight for Passenger Cars



Regular K & L Weight for Passenger Cars

**MID-WESTERN AUTO PARTS**

MANUFACTURERS EXCLUSIVELY

MAIN OFFICE AND FACTORY  
KOKOMO, INDIANA

WEST COAST FACTORY  
WHITTIER, CALIFORNIA

**See Your Jobber or Write Us Direct.**

**FREE!** Colorful Wall Poster for hanging over balancing machine. Shows pounding forces developed in “out-of-balance” wheel assemblies.



GEORGE VANCE



PETER SCHULTZ

# "We've had 23 Years of Outstanding Success with Dayton Truck Tires!"



Lompoc Truck Company operates a diversified fleet of hauling units in the construction field, including this heavy-duty platform train, equipped with Dayton Thorobreds.



"MILEAGE RECORDS for a period of 23 years have sold us 100% on Dayton Thorobred truck tires," declare George Vance and Peter Schultz. "We've run frequent tire tests with our equipment during that time, and the results show that Daytons provide up to 40% more new tire mileage and recaps than the average. These figures, and our long experience with the fine performance of Dayton Tires, enable us to recommend them enthusiastically to cost-conscious truck operators."

The reason behind the extra performance and extra long life of Dayton truck tires is the tough, durable, specially-processed Rayon Cord used in the bodies. Daytons are engineered to *exceed* usual standards in the truck tire industry. Each ply contains many extra cords per inch. *The result is big tire savings for Dayton users.*

## Dayton Rubber

DAYTON RUBBER COMPANY, DAYTON 1, OHIO

### A COMPLETE LINE OF TRUCK AND PASSENGER TIRES—EVERY ONE A THOROBRED!

COMMERCIAL CAR JOURNAL, September, 1952

**HOLLAND**  
*Engineered*

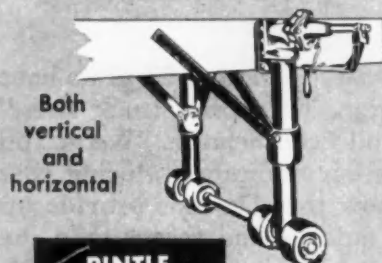
## TRUCK-TRAILER EQUIPMENT

### FIFTH WHEELS

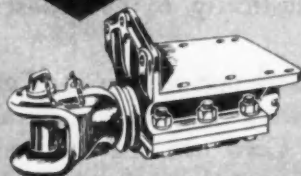


All types of 5th wheels—including the famous Apgar Safety 5th Wheel with the sixth sense.

### LANDING GEAR



### PINTLE HOOKS



A complete line of pintle hooks, towing rings, king pins and adapters, couplers and towing hooks.

For superior products achieved through 40 years of leadership and service, look to

**HOLLAND HITCH**

COMPANY

HOLLAND, MICHIGAN

DISTRIBUTORS IN PRINCIPAL CITIES

## ICC Announces New Assignments

COINCIDENT with the assumption of duties by newly appointed Interstate Commerce Commissioners Anthony F. Arpaia and Martin K. Elliott, the ICC has announced recently new division and committee assignments.

Arpaia, former vice president and general counsel of Adley Express, Inc., New Haven, Conn., succeeding John L. Rogers on the Commission, has been assigned to Division 5, along with William E. Lee, as division chairman, and Hugh W. Cross.

Elliott is assigned to Division 2, with Chairman J. Halden Alldredge, as division chairman, and Walter M. W. Splawn. He replaces Clyde B. Aitchison, recently resigned, on the Commission.

Other division assignments include:

Division 1—Charles D. Mahaffie, chairman, Lee, Richard F. Mitchell and Alldredge, ex-officio.

Division 3—William J. Patterson, chairman, J. Monroe Johnson and James K. Knudson.

Division 4—Mahaffie, chairman, Johnson and Mitchell.

Section 5A matters will be handled by Division 2 according to the announcement.

Administrative supervision of the Bureau of Motor Carriers is assigned to Lee in the new organization, with the other bureau assignments as follows; Formal Cases to Cross, Water Carriers and Freight Forwarders to Johnson, Valuation to Elliott and Informal Cases to Arpaia.

Knudson will continue as Defense Transport Administrator.

The new Committee on Legislation and Rules, with Splawn, chairman, Mahaffie and Cross, combines the former Legislative Committee and the Committee on Rules and Reports. The Section of Indices and the Library, both in Bureau of Law, will report to the ICC through Lee.

Advertisement in small southern newspaper: "In emergencies call Warren's Wrecking Service. We do wench work anywhere."

003

Louie says that an optimist is a guy who thinks his wife has given up cigarettes when he starts finding cigar butts around the house."

"This one clamp  
saves a dozen trips  
to the stockroom"



**"Aero-Seal"**

WORM DRIVE  
**HOSE CLAMPS**

No need for a trip to the stockroom for a clamp to tighten a leaky hose. Overhaul after overhaul, season after season, the mechanic simply replaces the worn hose and re-uses the same Aero-Seal Hose Clamp.



**WON'T CRIMP—CAN'T LEAK**

Worm drive applies even pressure all round the hose. Smooth saddle prevents cutting. No crimping—Aero-Seal can be replaced in any position. Three threads of worm always engage deep into slots of stainless steel band...hold hose tight over a million miles of roads!

**REPLACE ANYWHERE—ANY TIME**



A man can install an Aero-Seal any place he can reach with thumb and finger. Integral construction—no parts to lose. Self-feeding when worm engages band. Screw-driver slot or thumb grip screw styles. Tighten with a twist of the wrist.

Use of stainless steel subject to government regulations.



**BREEZE CORPORATIONS, INC.**

41 South Sixth St., Newark, N. J.



INSIDE and OUT...

# 100% Ausco Quality!

HYDRAULIC

## Axle Jacks

1½ TO 20-TON CAPACITIES

Take a close look at the ONLY HYDRAULIC AXLE JACK which is COMPLETELY MADE in ONE PLANT! From its serrated ram head down to its leak-proof base, this jack is 100% AUSCO, inside and out!

### 100% Ausco Quality!

ON THE OUTSIDE

THE CASTING is one of the most important parts of a hydraulic axle jack in terms of performance, stamina and safety. That's why Ausco makes its own jack castings, and makes them with the same high quality control and precision, which for 40 years has gone into original equipment castings supplied to leading car factories. These Ausco-developed NON-POROUS castings are guaranteed to be LEAK-PROOF and UNBREAKABLE!

EXCLUSIVE UNDER LIP on lever socket makes lever insertion easier, quicker!

### 100% Ausco Quality!

ON THE INSIDE

All the mechanism on the inside is Ausco-made, Ausco-quality controlled, Ausco-engineered with such important features as:

**STRAIGHT LINE OIL FLOW** to prevent accumulation of dirt in the pump. This helps start lifting action INSTANTLY . . . eliminates lost motion and wasted elbow grease!

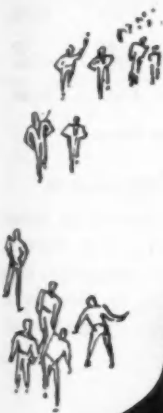
**MIRROR FINISHED** ram and cylinder tubing for smoother operation.

**REMOVABLE PUMP AND RAM**, for easy servicing without disassembling the jack.

LEAK-PROOF BASE ●

INSTANT LIFTING ACTION ●

RUGGED, TROUBLE-FREE ●



B-5831 R R

# Ausco Jacks

LATEST AUSCO JACK CATALOG contains the complete showing of all AUSCO Hydraulic and Mechanical Jacks. Send for your free copy today.

AUTO SPECIALTIES MFG. CO. • Dept. CC-9, St. Joseph, Mich. • Other Plants: Hartford and Benton Harbor, Mich.; Windsor, Ont., Canada

## News Reports

Continued from Page 31

### Insurance Up in 6 States

Private carriers and local commercial vehicles were recently hit with increased liability insurance rates in six states. Kansas, Maine, Maryland, Michigan, Nebraska and Nevada were affected by the action of the National Bureau of Casualty Underwriters.

William Leslie, Bureau general manager, said mounting accident frequency and higher claim costs because of infla-

tion have made the hikes necessary. Most long-haul, for-hire trucks are not included.

## 1952 Domestic Truck Factory Sales by G.V.W.\*

	5,000 lb. and less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-23,000	Over 23,000	Total
January	30,803	15,649	4,873	16,066	4,909	8,323	3,971	85,194
February	30,518	15,506	5,055	17,416	3,856	8,239	4,080	84,670
March	34,151	16,896	5,037	18,104	3,843	9,290	4,712	92,033
April	38,783	19,614	4,743	17,358	3,348	9,282	4,483	97,591
May	35,916	20,006	4,555	14,891	3,031	9,284	3,238	90,921
June	39,181	20,761	4,628	15,632	2,999	6,198	3,530	94,929
Six Months 1952	209,352	108,432	28,891	100,067	21,986	52,596	24,014	545,338
Six Months 1951	302,261	126,673	53,024	107,419	28,823	36,594	19,360	676,354

\* Automobile Manufacturers Association.

## 1952 Truck Trailer Shipments\*

	June	Six Months
<b>Vans</b>		
Insulated and refrigerated	252	1,645
Steel	59	450
Aluminum	193	1,195
Furniture	75	665
Steel	75	665
Aluminum	639	7,778
All other closed-top	507	4,553
Steel	332	3,225
Aluminum	154	1,174
Open-top	58	563
Steel	96	611
Aluminum		
<b>Total—Vans</b>	<b>1,320</b>	<b>11,262</b>
<b>Tanks</b>		
Petroleum	318	2,288
Food	17	145
L.P.G.	6	67
All other	32	230
<b>Total—Tanks</b>	<b>373</b>	<b>2,730</b>
<b>Pole, pipe and logging</b>		
Single axle	115	442
Tandem axle	159	666
<b>Total</b>	<b>274</b>	<b>1,308</b>
<b>Platforms</b>		
Racks, livestock and stake	342	2,831
Grain bodies	71	609
Flat (all types)	655	3,568
<b>Total—Platforms</b>	<b>1,068</b>	<b>7,026</b>
<b>Low-bed heavy haulers</b>	<b>456</b>	<b>3,116</b>
<b>Dump trailers</b>	<b>62</b>	<b>475</b>
<b>All other trailers</b>	<b>101</b>	<b>1,046</b>
<b>Total—Complete trailers</b>	<b>3,674</b>	<b>26,963</b>
<b>Converter dollies</b>	<b>61</b>	<b>479</b>
<b>Trailer chassis</b>	<b>292</b>	<b>1,892</b>
<b>Total—Trailers and Chassis</b>	<b>4,027</b>	<b>29,334</b>

\* Industry Division, Bureau of the Census.

## Synthetic Tire Research

The government is prepared to spend about \$6,500,000 during the current fiscal year on further research into synthetic rubbers, hoping to develop a still better material for truck and other large-sized tires.

## Fager Re-Elected

J. Wallace Fager, United Van Lines, Inc., St. Louis, Mo., vice president, was re-elected chairman of the Movers' Conference of America at its recent annual assembly in Chicago. Interstate Commerce Commissioners Richard F. Mitchell and James K. Knudson told the movers that section 22 of the IC Act should be changed to stop reduced rates to the government. The Conference also voted to continue its "freedom of movement of the individual" policy to obtain fuller interstate reciprocity.

(TURN TO PAGE 196, PLEASE)

**perfect motor harmony**

with Armor-Flex  
**MOTOR MOUNTS**

Automotive engineers specify an exact harmony between motor and transmission. When that harmony, or alignment, is disturbed, the motorist will experience such troubles as clutch chatter, difficult gear shifting or motor vibration. Be in tune with the ever-increasing importance of motor mounts. Stock the complete line.



**full floor protection**

with Armor-Flex  
**FLOOR MATS**

Floor Mats can be an essential part of your replacement business. The Armor-Flex complete replacement line is your best bet for building this profitable volume. It's made of heavy gauge, long wearing rubber, bonded to thick felt. Armor-Flex Mats cover the complete floor area for full protection. Packaged in individual cartons for easier merchandising. And it's priced right for you and your customers.



**Doan**  
**MANUFACTURING CORP.**  
1761 LONDON RD • CLEVELAND 12, OHIO



Over 26,000	Total
3,971	85,194
4,080	84,670
4,712	92,033
4,483	97,581
3,238	90,921
3,630	94,929
24,014	545,336
19,360	676,354

#### Shipments\*

June	Six Months
252	1,645
89	450
193	1,195
75	665
75	665
639	7,778
507	4,553
332	3,225
154	1,174
58	563
96	611
320	11,262
316	2,268
17	145
6	67
32	230
373	2,730
115	442
159	866
274	1,300
342	2,831
71	609
655	3,568
668	7,026
456	3,116
82	475
101	1,046
674	26,963
81	479
292	1,692
927	29,334

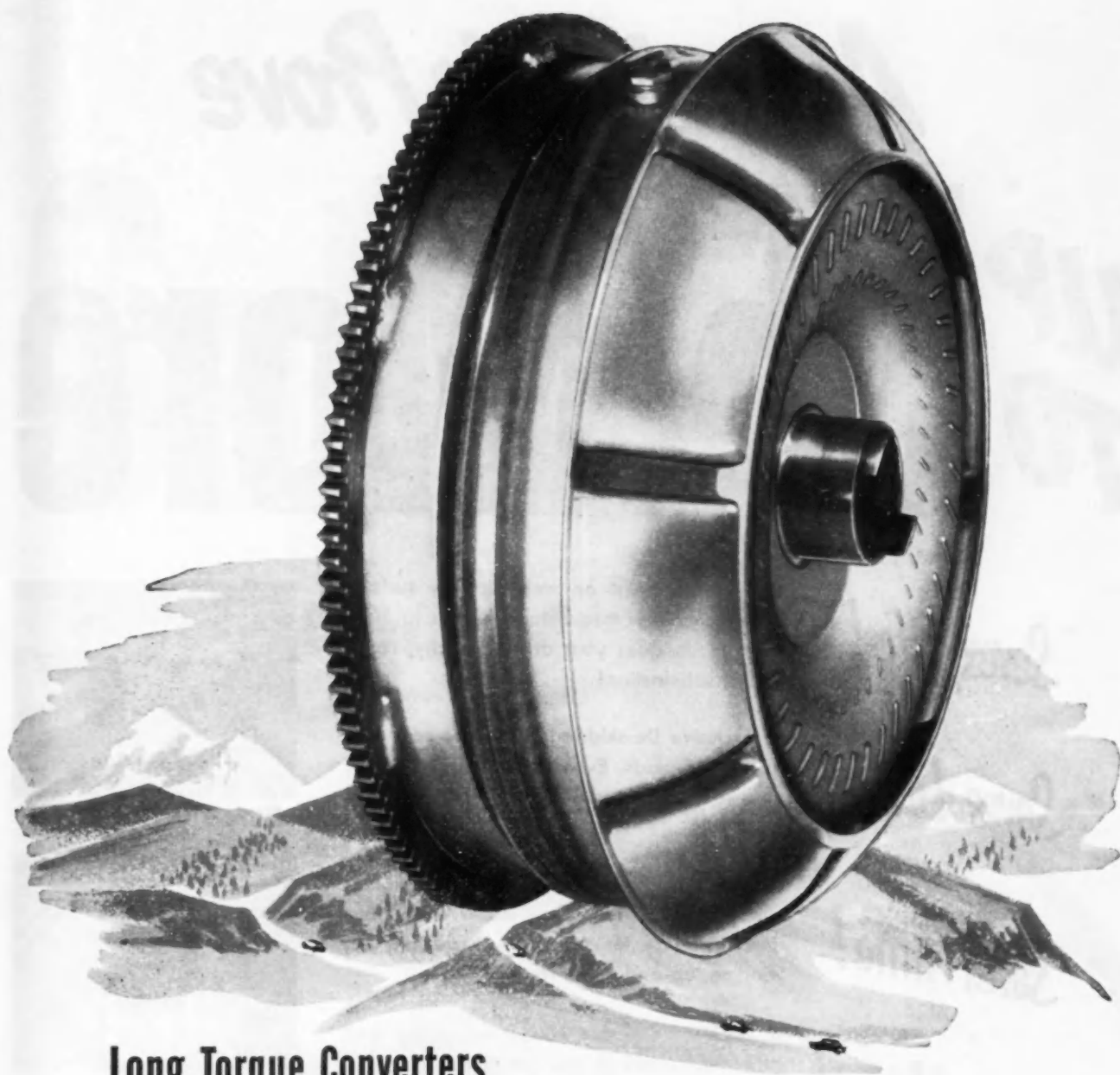
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ember, 1952



## Long Torque Converters *for Smooth Power Transfer*

Power moves smoothly through Long torque converters.

They give velvet-smooth pickup and infinitely variable torque multiplication.

Designed for direct air-cooling, our converter helps you simplify your transmission system.

You get an economical package . . . we achieve low-cost production by fabricating

the assembly units almost entirely from stampings.

### LONG MANUFACTURING DIVISION

Borg-Warner Corporation

DETROIT 12, and WINDSOR, ONT.





# Actual Tests Prove UP TO 55% More

*Saves Life!*

- Test after test on wet, slippery surface proved this new tread stops you up to 55% shorter! Up goes your driver security, confidence, satisfaction!

*Saves Loads!*

- Exclusive De-skidded ribs mean new control of sideskids. Even under heaviest load, you keep on course with sure, high-speed traction!

*Saves Time!*

- Now you hold firm against backsliding, wheel-spinning. Now you insure more "on-time" trips, faster schedules—especially on winding, up-and-down routes!

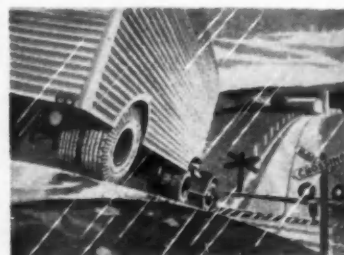
*Saves Money!*

- Safety renewable without recapping! And after final renewal, you get more recaps on the Raymaster's double shock-pads and safety-bonded carcass!

*Saves Customers!*

- At once—your service gains new dependability! You deliver through mud, rain, snow, sleet. You're there to meet your customers' demands!

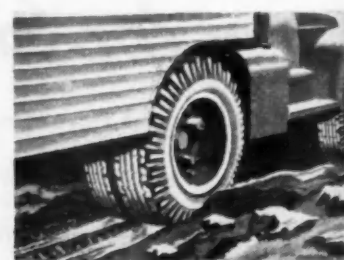
**Full proof is yours today at your U. S. Royal Dealer's. He's in the Classified Telephone Book. Phone him now!**



**MORE STOPPING POWER!**



**MORE SKID PROTECTION!**



**MORE TRACTION!**

# U.S. ROYAL

Product of UNITED STATES RUBBER COMPANY

e

# Safety!

Renewable without recapping

## New U.S. Royal De-skidded Tread

This small tread segment shows how hundreds of keen traction edges open up to knife through highway film—then bite together on dry pavement beneath. Result: True trucking safety for you!



# RAYMASTER

THE SPECIALIZED HIGHWAY TRUCK TIRE

## News Reports

Continued from Page 192

### Agency Appointed

Allman Co., Inc., Detroit, Mich., will handle public relations and advertising activities for the Michigan Trucking Assn., according to MTA president Walter F. Carey. William W. Johnston of the agency will have charge of the program. He was formerly with Oklahoma Broadcasters Assn., Steve Hannagan Associates, Marschalk & Pratt

and Brooke, Smith, French & Dorrance in public relations work.

### Management Service

A new service has been organized in the Middle Atlantic area to assist operators and manufacturers with their fleet equipment problems. George Frey Associates, Philadelphia 17, Pa., is set up to assist in planning new or additional garage or repair shop facilities, to survey product acceptance and improvement for truck and bus equipment manufacturers and for similar management advisory services.

### Welding Classes

Classes in advanced welding technique will begin Sept. 15, with a new session starting every two weeks thereafter until the end of the year. Full information may be obtained from Eutectic Welding Alloys Corp., Flushing 58, N. Y.

### School for Operators

Northeastern University, Evening Division, Boston 15, Mass., has announced a full program of regular evening classes and special "short courses" for truck and bus fleet operators. Details are available from Frank M. Cushman, director of the Traffic and Traffic Management Institute.

### Drivers Awarded for Safety

Safe driving awards were made by the following companies—

Hennis Freight Lines, Inc., Winston-Salem, N. C., presented 47 drivers with National Safety Council awards earned during the previous 12 months.

Eastern Auto Forwarding Co., Buffalo, N. Y., honored 230 drivers for piloting auto carriers 1,530,325 miles from May 26 to July 10 without an accident.

Hart Motor Express, Minneapolis, Minn., selected 64 drivers with a total safe driving record of 269 years and 16,260,000 miles to receive American Trucking Associations, Inc., awards.

Dixie Ohio Express Co. gave pins and certificates of merit for accident free driving records ranging from one to 10 years to 57 drivers from their Akron, Ohio, terminal.

Denver-Chicago Trucking Co., Denver, Col., gave trophies and awards to eight drivers with personal records of at least 10 years and 850,000 miles of accident-free driving.

Herr's Motor Express, Quarryville, Pa., presented nine drivers with one year safe driving awards.

Ward Trucking Co., Altoona, Pa., presented 89 of their 109 drivers with awards for driving without accidents during April, May and June. The remaining 20 drivers received "crying towels."

Suwak Trucking Co., Washington, Pa., awarded 12 drivers for driving a total of 500,000 miles of accident-free driving during 1951.

Pilot Freight Carriers, Inc., Winston-Salem, N. C., presented two six-year, two five-year, three four-year, nine three-year, seven two-year and 24 one-year awards to a total of 47 safe drivers at their semi-annual safety dinner.

(TURN TO PAGE 199, PLEASE)

# PREFERRED

...for Simplicity  
and Accuracy...



These **KIMBLE** Single-Solution Anti-Freeze Testers will make an instant hit with your men because they give the correct answers quickly and simply. Outstanding in every way, they are preferred because of—

**SIMPLICITY** — Testers are **DIRECT-READING**. The extra length, easy-to-read scale on the float and the big 10" graduations on the thermometer give you the correct answer fast.

**ACCURACY** — Made by the nation's foremost manufacturer of scientific glassware. Precision calibrated. Has big clear figures sealed under glass. Always stay clean and easy to read.

**DURABILITY** — Extra heavy fully annealed jar. Float is beaded to prevent sticking. Tip has non-roll, hex-shape base.

	Net Price to Fleet Owner
No. 548-TA for Ethylene Glycol such as "Prestone," "Zerex" etc.....	\$2.65
No. 550-T for Alcohol.....	2.65
No. 553-T for Methanol such as "Zerone," "Trek" etc.....	2.65
No. 554-T for Propylene Glycol....	3.00

No. 556-TA Universal Anti-Freeze  
Tester tests all basic solutions of  
alcohol, methanol and ethylene glycol.  
Preferred for simplicity and accuracy.  
Net Price to Fleet Owner.....\$5.50

THE IMPERIAL BRASS MFG. CO.  
1209 W. Harrison St., Chicago 7, Ill.  
In Canada: 334 Lauder Ave., Toronto, Ont.

# IMPERIAL

Brass Fittings • Flexible Fuel Lines • Shut-off Valves  
Tube Working Tools • Serial Printers • Service Aids

Manufactured  
by  
Kimble Glass  
Company  
subsidiary of  
Owens-Illinois  
Glass Company

Ask for  
Bulletin 398





# "Saves time and money"

says shop foreman of packing company



**M. H. SIMMONS** (right), shop foreman of the Pasco Packing Co., Dade City, Fla., is shown here with **J. E. Coleman**, Gulf sales engineer. "We use Gulf Motor Flush," writes Mr. Simmons, "in our entire fleet consisting of over one hundred trucks."

"We have found that it saves us considerable

time and money by thoroughly cleaning these engines without having to disassemble them.

"It would be difficult to estimate the amount of money this has saved us. In addition, by the way, we would like to express our appreciation of your fine Automotive Engineering Service."

## Engines dirty? Fight 'em with GULF'S FAMOUS 1-2 PUNCH!

**1.** Clean 'em out with Gulf Motor Flush to dissolve sludge, varnish and lacquer deposits from rings, valve stems, oil lines, oil screens and oil pans. *No dismantling necessary!*

Gulf Motor Flush is a powerful flushing agent—yet it is noncorrosive. Means more miles of ring life . . . fewer repairs.

**2.** Follow this up with Gulflube Motor Oil X.H.D. to keep them clean.

Gulflube X.H.D., in addition to giving increased mileage, will prevent plugging, sticking of piston rings, clogging of oil screens.

Get in touch with your Gulf representative today and find out how you can cut your maintenance costs and increase availability.



GULF OIL CORPORATION • GULF REFINING COMPANY

# YOU can Use Original Equipment

OLDBERG  
MANUFACTURING CO.

*Subsidiary of*  
**THE AP PARTS CORPORATION**

**AP**

*Mileage Getting*

Our whole  
facturing  
making  
millions

Mac  
Pontiac  
Cad

The same  
facilities  
users are  
perfect  
faction.

THE  
11  
Manufac

M

Co

# Use ent Mufflers!

Our wholly owned subsidiary—Oldberg Manufacturing Company—has made and is now making mufflers for original equipment on millions of trucks and cars including:

Mack • White • GM Truck • Divco  
International • Reo • Federal  
Pontiac • Mercury • Oldsmobile • Lincoln  
Studebaker • Chrysler • Nash  
Cadillac • Hudson • Ford • Packard

The same fine engineering and manufacturing facilities produce AP mufflers. That's why AP users are always sure of maximum silencing, perfect fit, quick installation and customer satisfaction.

**THE AP PARTS CORPORATION**

1181 AP Building • TOLEDO 1, OHIO

Manufacturers of: MUFFLERS • PIPES • MIRACLE POWER • dgf 123



# Mufflers

## News Reports

Continued from Page 196

### Another Road Test

A third major road test, reported to be more comprehensive and far-reaching than the famed Maryland Road Test or the WASHO test now under way in Idaho and costing an estimated \$4,000,000, is scheduled for Illinois according to a prospectus being circulated by the American Association of State Highway Officials' Committee on Highway Transport.

Plans call for construction of the test strip on the site of a future re-location of U. S. 6 between Ottawa and LaSalle, Ill. The test would be run on four 4-lane roads, 6000 ft long, to be operated as individual test loops. Each loop will have rigid pavement (portland cement concrete) on one side and flexible pavement (bituminous concrete) on the other.

Axle loads under consideration for possible testing include 14,000, 18,000, 22,400 and 30,000 lb on single axles. Tandem axle loadings are planned at 28,000, 32,000, 40,000 and 50,000 lb.

The two loops with the heaviest loadings will also include single span bridges constructed in accordance with the AASHO "bridge formula" on both the rigid and flexible pavement lanes to provide data for possible revision of the formula.

This "big" test will be the fourth in the series conducted by the AASHO, Canada, U. S. Bureau of Public Roads, Highway Research Board, Asphalt Institute, Portland Cement Assn., Automobile Manufacturers Assn., American Trucking Assn., Truck Trailer Manufacturers Assn., and National Highway Users Conference, among others. The first test was on the Pennsylvania Turnpike and adjacent non-toll highways.

### Class 1 Net Income Drops

Despite an increase in total revenue and tonnage hauled, net income of Class 1 motor carriers after taxes dropped to \$58,902,873 for 1951 as compared to \$99,580,364 for 1950, a 40.8 per cent decrease, according to the Bureau of Transportation Statistics and Economics of the Interstate Commerce Commission.

Class 1 operators, those with gross operating revenues of \$200,000 or more annually, hauled 231,661,061 tons of revenue freight in 1951, an increase of 7.8 per cent over 1950, and had gross operating revenues of \$2,695,851,191, up 12.4 per cent over the previous year.

However, expenses for the same period increased 15.2 per cent over 1950, for a total of \$2,570,799,008. The 1951 mileage total of 5,699,914,843 was up 7.3 per cent over the previous year.

1951 ratio of expenses to revenues rose to 95.4 as compared to the 1950 ratio of 93. Net operating revenue was down 25.5 per cent with a total of \$125,052,183, leaving, when other income and deductions were taken into account, a net income before taxes of \$116,552,372, down 28.2 per cent from 1950.

(TURN TO PAGE 252, PLEASE)

### Answers to Quiz on Page 14

- |      |      |       |
|------|------|-------|
| 1. F | 5. T | 9. T  |
| 2. T | 6. T | 10. F |
| 3. F | 7. F | 11. F |
| 4. F | 8. F | 12. T |



# PAYLOAD-1,195 EXTRA PO

**GMC engineering brings you a great new gasoline-powered highway tractor that hauls up to 1,195 pounds more cargo than any other vehicle in the 45,000 gross weight class—to cut your costs, increase your profits.**

**N**EVER before has a motor truck been designed to make 45,000 pounds gross capacity pay off so profitably as the sensational new GMC 470 pictured here.

In building it GMC engineers incorporated new advances in engine and chassis construction that reduce "dead weight" and increase payload capacity—without sacrificing GMC's time-proved ruggedness.

As a result, more of the total weight this

GMC puts on the road is payload—by as much as a good half-ton and more!

It earns more revenue, puts more profit into every ton it moves—and does it with less maintenance, fewer repairs because it is as strong as it is trim.

**Its 145 H.P. engine is the most powerful for its weight in truck history**

Compare the record-breaking "302" valve-in-head engine that powers this new GMC with all others in its class, pound for pound. It puts more sock into every drop of fuel—explodes gasoline under the highest compression of any standard truck engine ever built—actually delivers 23% more horse-



# TRA POUNDS OF IT!

payload—by as  
ore!

more profit into  
es it with less  
because it is as

most powerful  
history

g "302" valve-  
his new GMC  
nd for pound.  
drop of fuel—  
highest com-  
k engine ever  
more horse-

power from regular fuel than its famous  
"work horse" predecessor!

Result: the new GMC 470 drives with less  
gearshifting, less "horsing." And because it  
can haul faster—it can haul more loads per  
day.

From its sturdy rear axle that's rated at 17,000  
pounds and will accommodate 10:00/20 tires,  
to its husky, bumper-bar grille—it's a solid  
performer that rides out the roughest going  
without a wince.

## Price—the biggest surprise of all!

After you have selected from the line-up of  
new GMC 470 conventional and cab-over-  
engine models—compared the performance  
with any other truck-tractor rated up to 45,000  
pounds GCW—do one thing more.

Compare the price you have to pay for this  
pace-setting GMC Model 470 against the  
field!

Do it and you'll say what truckers every-  
where are saying: Nowhere else will so little  
buy so much in a 3- to 4½-tonner!

## Engineered With The Finest Features

★ Full-pressure lubrication to all main bearings and piston  
pins! ★ Airplane-type main & rod bearings for extra  
durability! ★ Recirculating ball-bearing steering mecha-  
nism for ease in handling! ★ Deep, rigid frame construction  
—like the largest GMC's! ★ Long, pillow-action springs  
that cushion the load! ★ Full Air Brakes—standard equip-  
ment! ★ "Shockproof," four-point cab mounting for longer  
truck life and greater driver protection!

GMC Truck & Coach Division of General Motors

New Gasoline-Powered GMC 470-30  
Series Highway Tractor, GCW 45,000  
lbs. Also available in C. O. E. models.

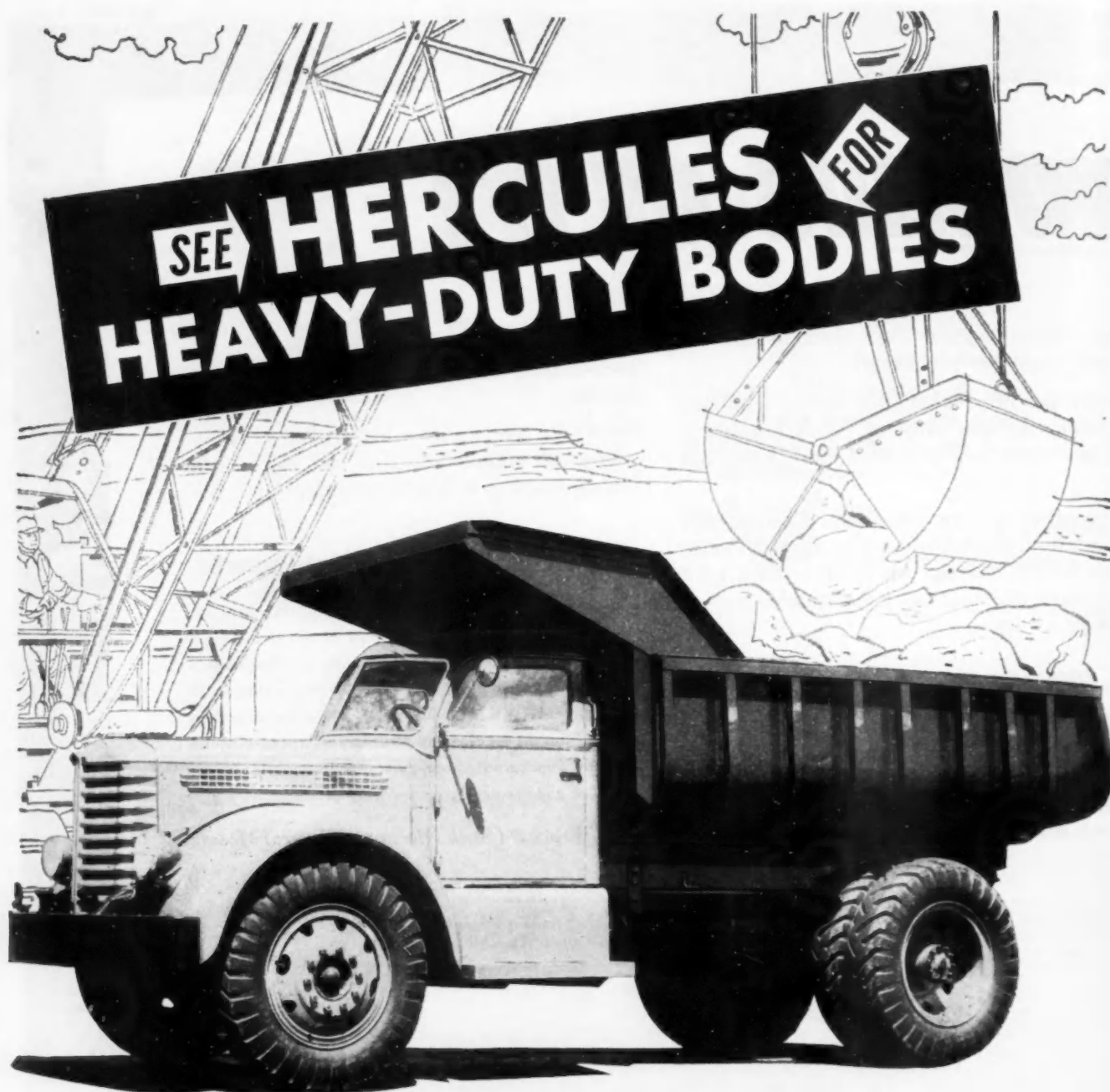
# GMC

## TRUCKS

GASOLINE 4,800 GVW TO 90,000 GCW  
DIESEL 19,500 GVW TO 100,000 GCW

Your key to greater hauling profits





If your jobs demand dump bodies built for *extra-heavy duty*—built from the hoist on up to deliver top performance under toughest conditions—you'll find the right answer in the Hercules line.

RIGHT . . . because there's *reserve strength* in every rugged inch of these girder-reinforced bodies of high carbon steel.

RIGHT . . . because the famous Hercules "Center-Lift" Hoist is second to none for lasting strength, stability and smoothly powerful operation.

Broad claims? Not when they can be backed up by the kind of service records rolled up by Hercules Heavy Duty Truck Equipment! Your nearby Hercules Distributor is ready to prove them to your profit. Or write direct for full facts.



**HERCULES** STEEL PRODUCTS CORPORATION, Dept. 901, GALION, OHIO



# No Other Anti-Freeze Gives The Same Complete Protection!



## YOU'RE SET!

You're set for the whole winter! "Prestone" anti-freeze gives complete cooling-system protection from fall till spring!

## YOU'RE SAFE!

You're safe under all operating conditions! Heavy pulling, idling or parked — there's no foaming, no "boil-away", no freeze-up!

## YOU'RE SURE!

You're sure you have the best! Special chemical and physical inhibitors . . . complete all-winter protection against cooling-system trouble due to coolant failure!

**ORDER FROM YOUR  
"PRESTONE" ANTI-FREEZE  
BRAND  
SUPPLIER NOW!**

The terms "Prestone" and "Eveready" are registered trade-marks of Union Carbide and Carbon Corporation  
**NATIONAL CARBON COMPANY**  
A Division of  
Union Carbide and Carbon Corporation  
30 East 42nd Street, New York 17, N. Y.

**HIGH**  
**TEST PROTECTION**

**LOW**  
**COST PROTECTION**

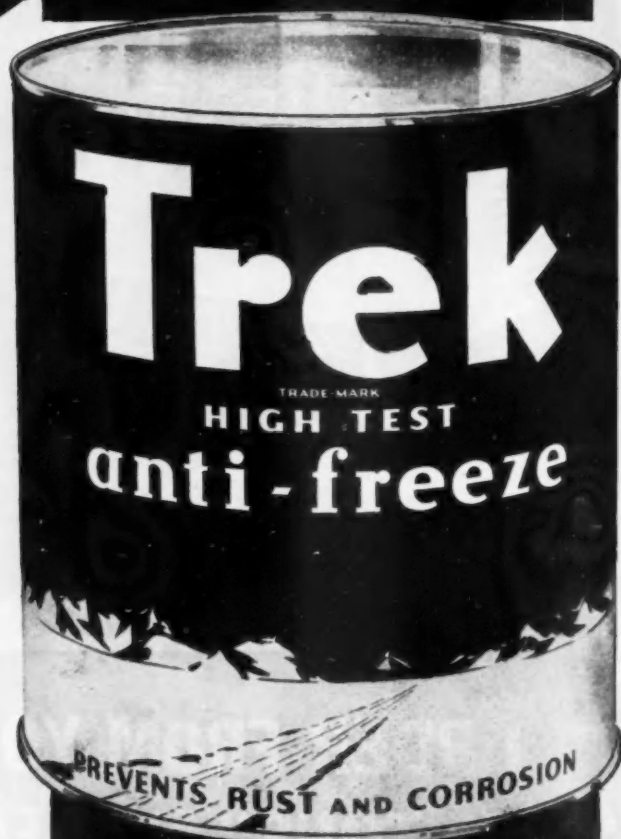
**Trek**  
BRAND

**Volatile-Type  
Anti-Freeze**

- **CONCENTRATED METHANOL**  
*...contains no other alcohols*
- **PREVENTS RUST  
AND CORROSION...**  
*superior inhibitors*
- **NO OFFENSIVE ODOR...**  
*more satisfactory service*
- **UNIFORM QUALITY**  
*controlled by continuous tests in the  
world's largest anti-freeze laboratory*

**ORDER FROM  
YOUR SUPPLIER NOW!**

**Available in 54-gallon drums,  
one-gallon and one-quart cans.**



**NATIONAL CARBON COMPANY**  
A Division of Union Carbide and Carbon Corporation  
30 East 42nd Street, New York 17, N. Y.  
The registered trade-mark "Trek" distinguishes  
products of Union Carbide and Carbon Corporation

# J & L OTISCOLOY

## HIGH STRENGTH STEEL

Helps Make Friends for Penn Body Division  
of Hockensmith Corporation

# J & L STEEL



Rock from Penn-Lincoln Parkway job drops into Robinson Company truck. J&L Otiscoloy body members and J&L heat-treated Jolley plate bed floor assure long truck body service life.

### E. F. Robinson Co. Reports Otiscoloy Truck Bodies Increased Payloads, Gave Longer Service Life with Lower Maintenance Costs

Mr. E. F. Robinson, President of the E. F. Robinson Company, Pittsburgh, Pa., reports extra-long service life—maximum payloads from 15 dump trucks built with bodies and supporting members of J&L Otiscoloy high-strength steel.

Fabricated by the Penn Body Division of the 75-year-old Hockensmith Corporation, and employed by Robinson in the construction of Pittsburgh's new Penn-Lincoln Parkway, the truck bodies have already stood up under 2½ years of punishing service.

In addition, J&L Otiscoloy's great strength permitted Penn Body to employ lighter sections in the truck construction—deadweight was cut and Robinson could haul bigger pay-

loads inside the legal weight limits.

The result—Mr. Robinson will specify J&L Otiscoloy in any new truck body orders placed with Penn Body.

If you're operating or building equipment where deadweight cuts into payloads, and where impact, abrasion or corrosion limit service life, you'll find J&L Otiscoloy can help you, too. Here's why—

Compared to mild steel, Otiscoloy has 4 to 6 times greater resistance to atmospheric corrosion—greater resistance to fatigue and abrasion. Finally, Otiscoloy can be welded by any of the standard methods and can be readily cold formed.

Why not take a tip from other up-to-date operators? Send for a free copy of our booklet—"J&L Otiscoloy—the Transportation Steel." Better still, get in touch with the J&L representative nearest you today.

Jones & Laughlin Steel Corp.  
432 Liberty Avenue  
Gateway Center  
Pittsburgh 30, Pa.

☐ Please send me a copy of your booklet—"J&L Otiscoloy—the Transportation Steel."

☐ Please have your representative call.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

## JONES & LAUGHLIN STEEL CORPORATION

PITTSBURGH 30, PA.



# Pathfinder

STATE  
APPROVED

LIGHTING EQUIPMENT

Points the way to **FLEET SAFETY!**



## Pathfinder

SELECTO-SET

**SIGNAL LIGHTS** for

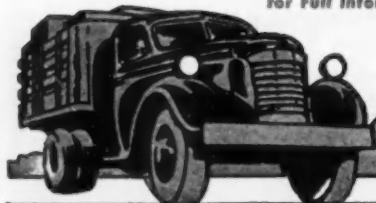
light panel trucks and other  
delivery vehicles

**EASY** to install. Three types (flush, fender type and stud mounting) permit you to make sets to fit most light delivery vehicles. Directional signals flash from clear-lens front lights and red-lens rear lights. Automatic, self-cancelling switch cuts off after turn is made.

**SET NO. SC4-369 (Illustrated)**

Complete with 2 fender-mounting lights with clear lens and 2 fender-mounting lights with red lens, 21 C.P. bulbs, switch, flasher and wire for complete installation.

See Your Pathfinder Jobber or Write Direct  
for Full Information — **TODAY!**



Illustrated: No. 4301  
Fender Mounting Type

## Pathfinder

SEALED BEAM...CLASS 1...TYPE "A"

**SIGNAL LIGHTS** for trucks,

tractors, trailers and busses

Conform to all S. A. E. Specifications!

**FLASH** 12 square inches of illumination. Self-cancelling switch provides *automatic signal cutoff* after turn is made (also operates manually).

**6 SETS** FIT MOST HEAVY DUTY VEHICLE REQUIREMENTS. Easy-to-install set is complete with steering post switch and beam indicator, harness, mounting clamps, flasher, inline fuse, all necessary wiring, and full directions for installing. 6 or 12 volt lamps available.

- Sturdy Black Weather-Resistant Enamel Finish
- Moisture-proof — Dust-proof — Fume-proof
- Sealed-Beam GE Units



## AUTO LAMP Manufacturing Co.

2909 INDIANA AVENUE • CHICAGO 16, ILLINOIS

# MARMON-HERRINGTON All-Wheel-Drive



## Top choice... where performance counts

It's no accident that Marmon-Herrington *All-Wheel-Drive* Fords are today's biggest selling multiple-drive trucks. They're top choice with owners because they're tops in performance—tops in dependability—tops in dollar value.

Get behind the wheel of a Marmon-Herrington *All-Wheel-Drive* Ford—see for yourself how live power and traction in all wheels levels steepest hills and mountain grades—feel how those working front drive wheels literally lift you through deep mud, sand and snow... even with peak loads aboard.

Then look underneath. Notice how the frame has been reinforced at all critical points. Look at the heavier, stronger springs; the husky, powerful front driving axle... all built permanently into each vehicle—right at the Marmon-Herrington factory.

Don't buy any multiple-drive truck until you've seen the new high-speed, high-performing Marmon-Herrington *All-Wheel-Drive* Fords. See your Marmon-Herrington dealer—or write for literature.

**MARMON-HERRINGTON COMPANY, INC.**  
1521 W. Washington St., Indianapolis 7, Ind.

# MARMON-HERRINGTON All-Wheel-Drive

## SERVICE AVAILABLE AT FORD DEALERS EVERYWHERE...



For the most part, Marmon-Herrington uses standard Ford parts in converting to *All-Wheel-Drive*. Consequently, fast, efficient, low-cost maintenance and repair service is available at Ford dealers everywhere. When, occasionally, special parts are required, they are quickly obtainable through Marmon-Herrington distributors, conveniently located in principal cities the world over.

# FORDS



# SPOKE WHEELS

... Standard on **FORD**  
**F-7 and F-8 "Heavies"**

In building "Big Job" trucks that give long, dependable hauling service, Ford engineers specify spoke wheels as standard equipment. These sturdy lightweight wheels are made to stand the gaff of full pay-load operation. One reason . . . they're constructed of rugged cast steel. Another . . . the spoke design provides better ventilation . . . carries off more of the heat that arises from hard-working brake drums.

- Spoke wheels reduce "down time" . . . provide faster tire changes on tight schedules . . . assure minimum unsprung weight . . . and cut per mile operating costs. Be sure your new Ford F-7 or F-8 is equipped with spoke wheels. They're standard at no premium in price.

The spoke wheels used by Ford are made by Gunitite Foundries Corporation . . . a leader in the development of superior metals and metal products since 1854.



GUNITITE REAR TRUCK WHEEL

## GUNITITE

**GUNITITE FOUNDRIES CORPORATION, Rockford, Illinois**



Add thousands of extra miles of maintenance-free service  
to every vehicle in your fleet!

## American Hammered PISTON RINGS and *Power-Plus Service*



Here's  
How

Install American Hammered Piston Ring Sets. They deliver superior performance in every way. These famous piston rings, engineered for any and every engine condition, really perform under the rugged conditions imposed by modern, heavy-duty engines.

### KOETHERIZING

Koetherizing restores worn and collapsed pistons to their original fit faster, and most important, with a permanence that really pays off in fleet operations.

Stresses have collapsed piston by pushing skirt inward, causing piston slap and ring wear.

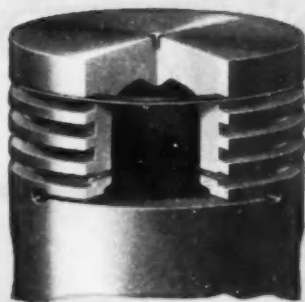


Inside of piston skirt being peened with shot at the rate of 16,000 a second, causing rapid, accurate expansion.

Resizing is finished in seconds. And, because Koetherizing takes place when metal is cold, the piston will never collapse again.



Remember, more pistons have been resized by Koetherizing than by any other method.



### GI-60 GROOVE INSERT

The GI-60 Groove Insert forms a heat-treated, spring-steel shield which resists wear and pounding of the top land better than either aluminum or cast iron. This insert is locked permanently in place and affords perfect seating for the new ring. It gives a piston up to two hundred thousand miles of extra life.

### DRY FILM LUBRICANT

(ANTI-SCUFF COATING)

Dry Film Lubricant furnishes outstanding protection against friction damage and allows a good, snug fit, without danger of scuffing during the critical break-in period.



## American Hammered

*Automotive Replacement Division*

500 SANFORD STREET, MUSKEGON, MICHIGAN



For the best in fleet maintenance, for the best in fleet performance,  
get American Hammered Piston Rings and Power-Plus Service

# Ready to



☆ More Trailer  
For Its Weight!

☆ More Trailer  
For Its Price!



*World's Largest Builders of Truck-Trailers*

**FRUEHAUF TRAILER COMPANY**

**Detroit 32, Michigan**

**BRAND NEW, EXCLUSIVE *Road Star* FEATURES**

# go...\$5823\*!

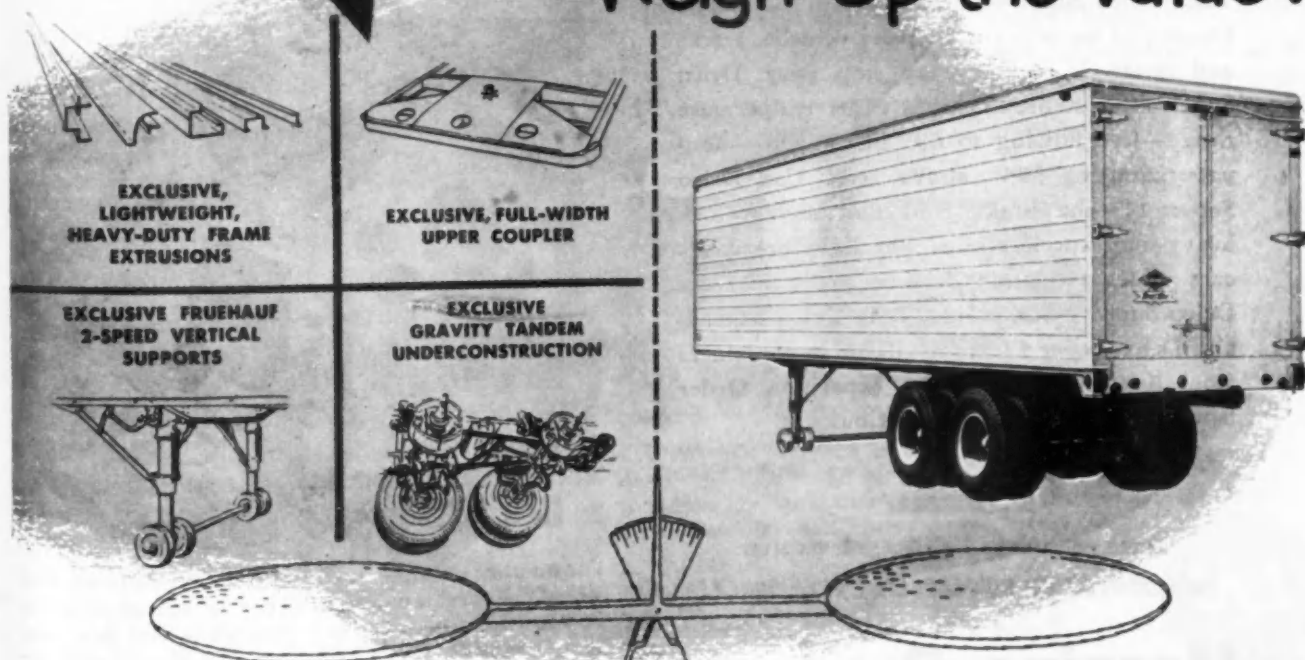
## The New 33-Foot Road★Star Tandem!

**\$5823**

\*F. O. B. Avon Lake, Ohio  
Taxes Extra  
Slightly Higher  
West of the Rockies

THE PRICE IS *LOW* for the unmatched quality you get in Fruehauf's new, lightweight, aluminum Road★Star! The price is low because *you know* that the very finest in Trailer engineering and precision-construction goes into every Fruehauf built. Only Fruehauf offers you so many weight-saving, time-saving, cost-saving features at these low prices! Only Fruehauf *can* offer you items like the exclusive, patented, 2-speed vertical supports, the full-width, reinforced coupler plate for wide-angle coupling, and the tire-saving, scuffless Gravity Tandem, with the only *complete* tandem guarantee in the industry. When you add up proven Fruehauf dependability, proven Fruehauf quality, and all the exclusive new Road★Star features, you'll have to agree: there's *more value* per dollar in the Road★Star. For *tops* in quality, *the price is low!*

### Weigh Up the Value!



### AND TOP FRUEHAUF QUALITY THROUGHOUT!





Our Business is...  
**Stopping  
you!**



Take Delco Super 11 brake fluid, for example. Developed for taxicabs, delivery vehicles, trucks and buses, it makes every stop *surer*. Delco Super 11 is stable during a wider temperature range—free flowing to 60° below zero—non-vaporizing to 325° above zero. Use Delco Super 11—the brake fluid that *exceeds* SAE heavy-duty specifications. For light passenger cars under moderate driving conditions, use Delco Super 9 brake fluid. Both Delco Super 9 and Delco Super 11 are available in containers from 8-ounce to 54-gallon capacities. Order from your United Motors distributor.

#### DELCO BRAKE

A GENERAL MOTORS PRODUCT  A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

**Moraine Products**  
DIVISION OF GENERAL MOTORS



WHEEL-CYLINDER  
REPAIR KIT.

MASTER-CYLINDER  
REPAIR KIT.

For another example, take Delco master-cylinder and wheel-cylinder repair kits. They've solved many a fleet owner's brake repair problems. One kit contains all the parts needed to restore a master cylinder assembly to good operating condition. The other has the necessary parts for reconditioning the wheel cylinder. Order from your United Motors distributor.

# Add up these facts!

## you'll find **U·S·S COR-TEN** steel\* is the answer for Reducing Weight and Increasing Profits

\*COR-TEN is the registered trade-mark of United States Steel Company for one of its high-strength low-alloy steels.



**300 BONUS GALLONS.** Fruehauf trimmed 1,860 pounds off the weight of this unit by using COR-TEN steel. That means it can haul 300 extra gallons at no cost. These extra gallons ride in place of the useless deadweight that was removed.



**A FREE RIDE FOR HALF A TON OF GASOLINE.** This COR-TEN steel unit, built by Trailmobile, weighs half a ton less than it would if it had been built of plain carbon steel. The operator hauls the equivalent weight as bonus payload.

**SAVES DELIVERY COST ON 300 GALLONS.** By using U·S·S COR-TEN, the Butler Manufacturing Company saved about one ton of steel. 300 gallons of gasoline now ride in place of that useless deadweight.



1. U·S·S COR-TEN High Strength Steel is 50% stronger than plain carbon steel. It has 4 to 6 times the resistance to atmospheric corrosion and a high resistance to load surge and vibration.
2. That means you can use U·S·S COR-TEN steel in lighter sections than ordinary steel without reducing strength or durability.
3. Lighter construction with COR-TEN steel can be utilized in two ways:

A tank can be built to the same *capacity* as its counterpart made of plain steel. In this case, it will weigh many pounds less.

Or, it can be built to the same *weight* as a similar tank of ordinary steel. In this case its capacity will be larger . . . it will hold many additional gallons.

In short, by using U·S·S COR-TEN steel you can build your tanks *lighter* without reducing capacity, or you can build them *larger* without increasing weight.

4. Either way, you save money. In the first case, you haul the same capacity at *less cost*. In the second case, you haul *more payload* at the same cost.
5. These operating savings and extra profits pay for the slight extra cost of COR-TEN steel in a very short time. From then on, you have a clear bonus.

Our engineers, who 16 years ago pioneered the use of U·S·S COR-TEN steel in gasoline and oil hauling equipment, will be glad to show you how you can use COR-TEN steel to make your equipment more efficient and more profitable.

UNITED STATES STEEL COMPANY, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO  
NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS  
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

## U·S·S COR-TEN High Strength STEEL



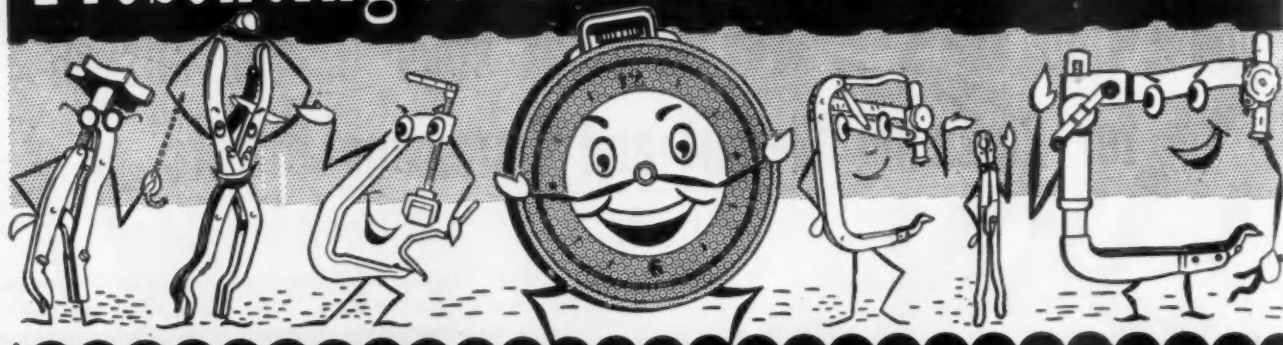
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UNITED STATES STEEL

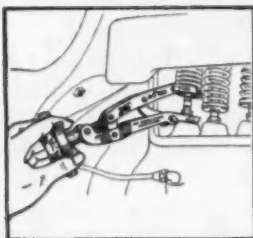
COMMERCIAL CAR JOURNAL, September, 1952

213

# Presenting...Your K-D Timesavers



## 700 Lifter for L-Heads



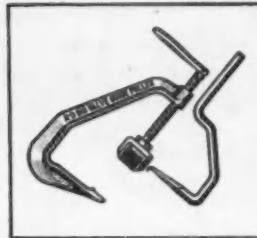
Popular "shorty" handwheel type lifter for hard-to-get-at valves. Speeds the job on all Chrysler-built and other low hung L-heads. Also for Ford 6 cyl. passenger 1948-51 incl. Only 8" long.

## 600 Lifter for L-Heads



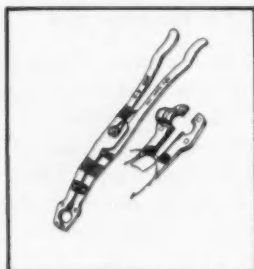
Old favorite for L-heads old and new. Parallel jaw action. Automatic ratchet lock holds lifter in place, allows free use of both hands. Also for Industrial and Marine engines.

## 920 Set for Ford V-8s



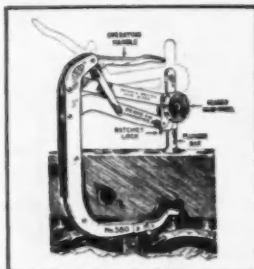
Pulls valve guide assemblies FAST, no matter how tightly stuck. 917 removes retainers; 918 pulls assemblies. For all Ford built V-8s since 1932 except 60 hp, and late 150 hp Trucks & Lincolns.

## 608 Insertor



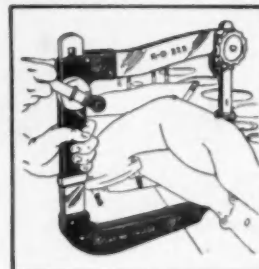
Specially designed to replace the one size split keeper now used on most all present motors (including Ford and Chrysler!). Light, easy loading, self-supporting on valve stem.

## "Universal" 380 Compressor



Will service over 85% of all your calls —L-head or valve-in-head engines, old or new (including "Rocket" engines and 1952 Ford 6 overhead valves). Fast, safe, strong. One man operated.

## 325 Compressor for BIG Jobs



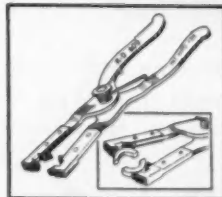
Get it for big truck, bus, tractor motors. One man can operate this rugged, deep throated tool on most engines (L- or valve-in-head) with manifolds in place. Fast and versatile.

## 335 CADILLAC Compressor



For shops specializing in Cadillac service. For all V-8s 1936 to 1949. Service both banks of valves without walking from side to side.

## 609 MAGNETIC Insertor



Specially designed to handle large, split collar type keepers used on late model Ford-built free type valves (150 hp V-8, 110 hp 6 cyl. truck).

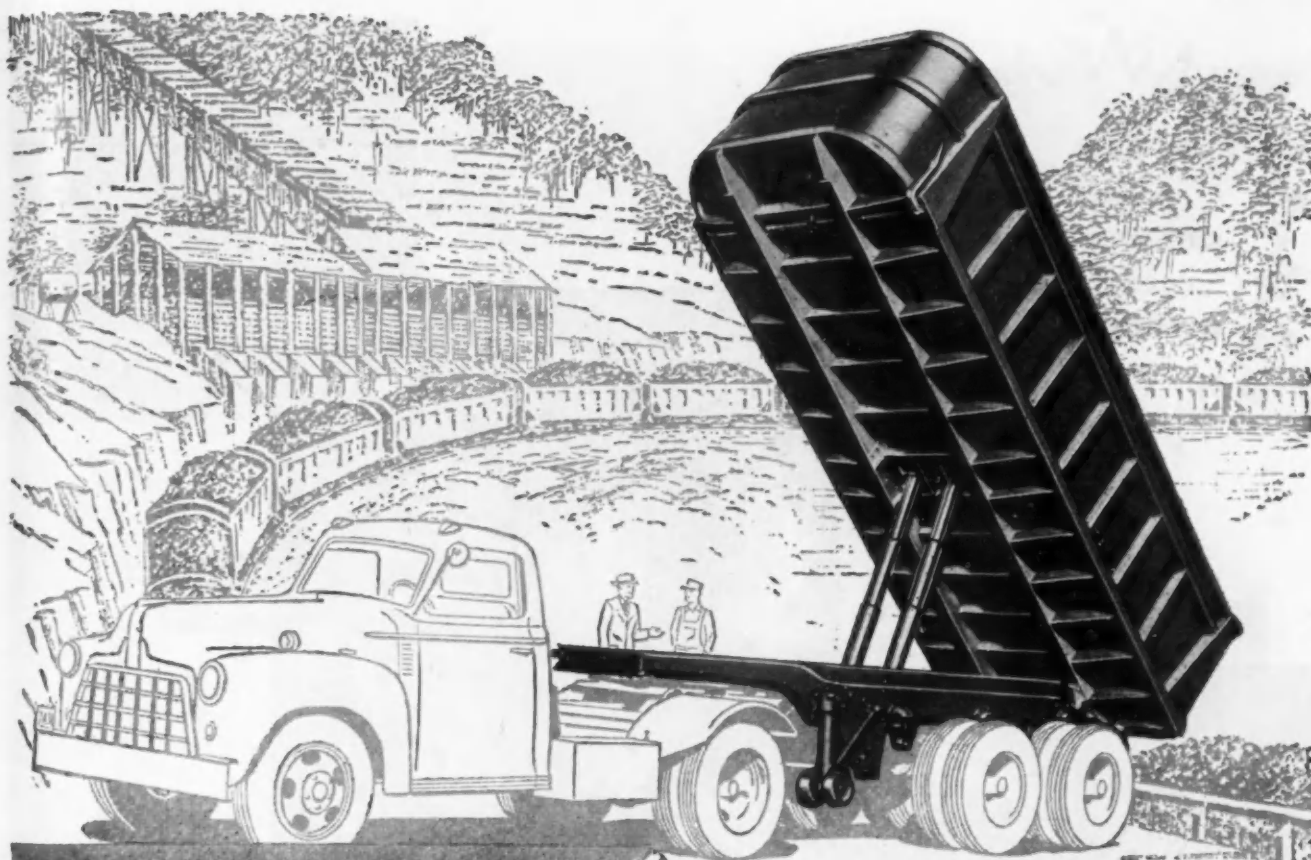
Write for Free copy of K-D Catalog. Over 100 Tools described and illustrated.



# K-D TOOLS

K-D MFG. CO.  
LANCASTER, PA.





use **MARION**  
BODIES AND HOISTS  
dump trailers for  
*haulage efficiency*



*"Designed on the Job"*

**MARION**  
BODIES AND HOISTS

Many Marion owners are purchasing additional Marion Dump Trailers. These owners know the extra benefits that can be expected from Marion equipment.

They know that these benefits mean dollars saved . . . because of greater load-carrying capacities, less maintenance cost and fewer man-hours per-ton payload.

Marion all-welded Trailer Bodies are constructed to withstand sagging or twisting when loads are uneven or extra heavy. Marion's Heavy-Duty Hoists operate with extremely low, even oil pressures . . . without high-surge points during any part of the lift.

Marion Hoists are specially designed to provide load stability throughout the dumping cycle . . . thus reducing the possibility of overturning when operating under adverse conditions.

Marion's "Designed on the Job" Dump Trailers and heavy-duty hoists have the built-in endurance that insures a dependable, performance-plus operation.

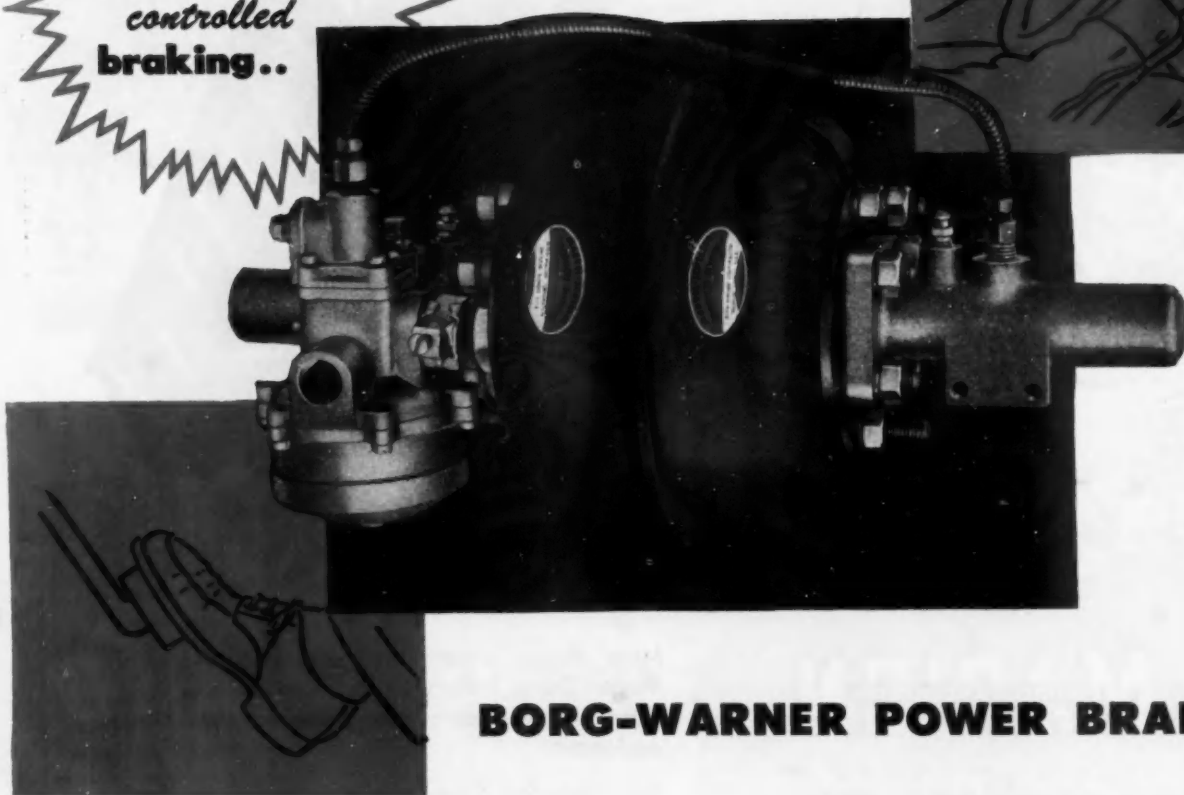
Get all the facts . . . call your nearby Marion Distributor or write direct—today!

**METAL PRODUCTS CO.**  
Marion, Ohio, U. S. A.

*Manufacturing a complete line of standard and special Hydraulic Hoists and Dump Bodies*

COMMERCIAL CAR JOURNAL, September, 1952

**The  
right  
answer for  
controlled  
braking..**



## **BORG-WARNER POWER BRAKES**

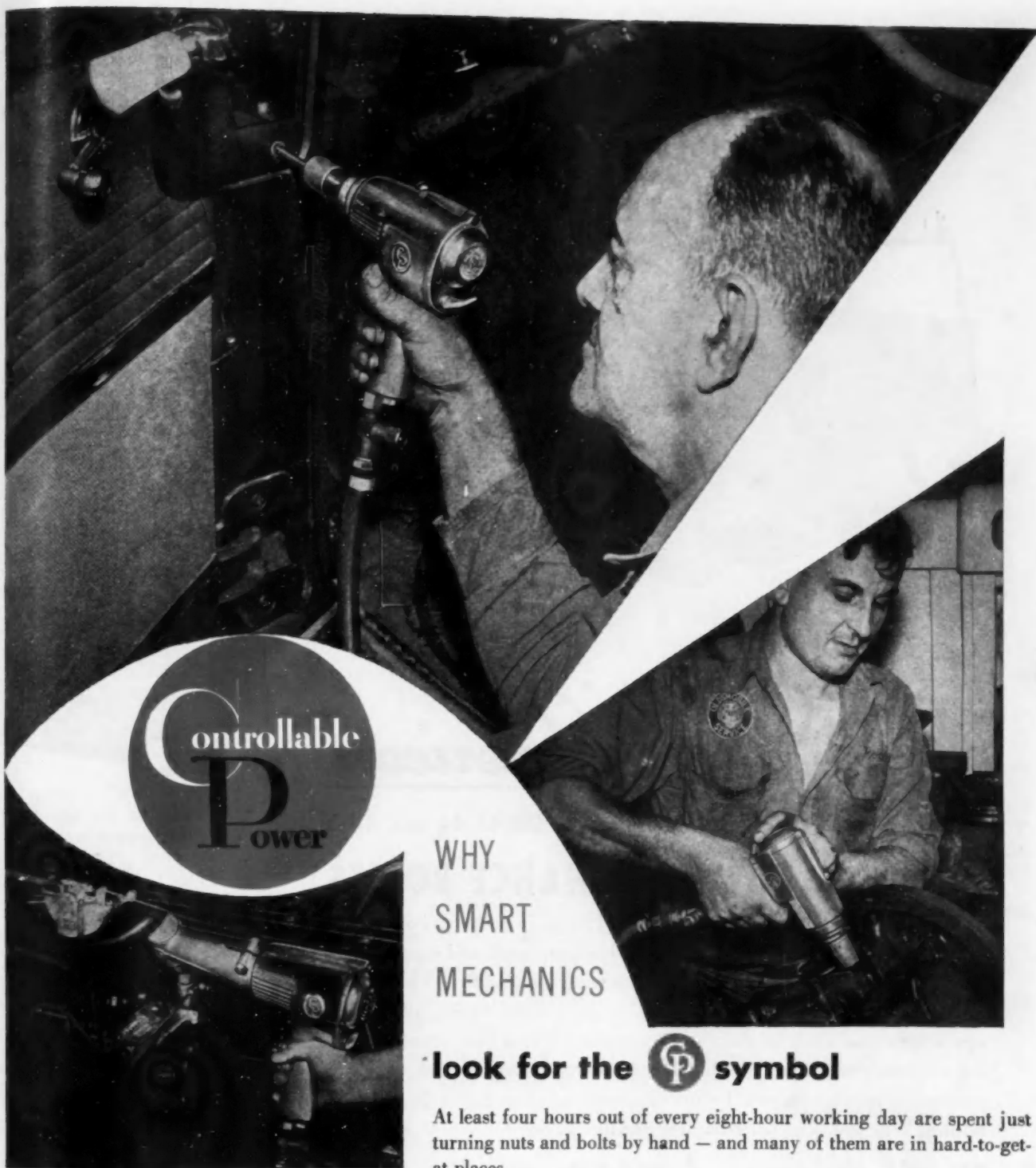
Here's power braking exactly tailored for each vehicle and load requirement —*controlled* braking for your trucks whose braking requirements become more critical as traffic congestion and highway hazards grow.

You, as well as your drivers, benefit by the superiority of Borg-Warner Power Brakes. You get added protection for equipment and manpower. Borg-Warner standards of material and workmanship eliminate a lot of costly down-time for brake servicing. And Borg-Warner engineering makes it possible to match power unit and master cylinder displacement . . . assures easier, more positive application; more positive release.




*In addition, Borg-Warner power brake systems include complete tractor-trailer units, hand valves, foot valves, and conversion valves.*

**Distributed by:**  
**BORG-WARNER SERVICE PARTS CO., CHICAGO, ILLINOIS**



Controllable  
Power

# WHY SMART MECHANICS

look for the  symbol

At least four hours out of every eight-hour working day are spent just turning nuts and bolts by hand — and many of them are in hard-to-get-at places.

CP AIR IMPACT WRENCHES will save you 75% of this nut and bolt turning time — yielding three additional "labor sale" hours a day.

With wrench capacities of 1/2", 5/8", 1" and 1 1/4" bolt size, Chicago Pneumatic offers the only complete line of impact wrenches with controllable power that makes it easy to run a series of nuts to uniform, predetermined tightness.

Write for Bulletin SP-3029

All CP Controllable  
Air Impact Wrenches  
have detachable angle heads  
for close-quarter work.

 Fiftieth  
ANNIVERSARY



**CHICAGO PNEUMATIC  
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General Offices: 8 East 44th Street, New York 17, N. Y.

AUTOMOTIVE SERVICE EQUIPMENT • FENDER IRONS • ELECTRIC TOOLS  
AIR IMPACT WRENCHES • AIR COMPRESSORS • PNEU-DRAULIC PUMPS



# 5 Ways to Speed Up Your Service Work



Series 44-90 can be installed on chassis having C.A. dimension of approximately 48"



SERIES 44 and 44-L

## SERVICE AND MAINTENANCE BODIES

These five bodies have an impressive record for saving time and money on service jobs. Compartments are equipped to keep tools and supplies safe and orderly — easy to inventory before leaving for the job — easy to find upon arrival. The bodies are adaptable to a wide variety of service operations, and each model can be transferred to a new chassis when the original truck wears out. If you're looking for new ways to get more productive man hours, you'll want full information on Series 44 and 44-L bodies. Why not send for complete details . . . now?

*Clip this coupon and attach to your letterhead!*

McCABE-POWERS AUTO BODY CO., 5908 N. Broadway, St. Louis 15, Mo.

Please send me complete information on the following:

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Series 44-75  | <input type="checkbox"/> Series 44-L-90           | <input type="checkbox"/> Revolving Aerial Ladders |
| <input type="checkbox"/> Series 44-90  | <input type="checkbox"/> Series 44-L-104          | <input type="checkbox"/> Hydraulic Towers         |
| <input type="checkbox"/> Series 44-104 | <input type="checkbox"/> Line Construction Bodies | <input type="checkbox"/>                          |

Name.....Title.....

Company.....

Address.....

City.....Zone.....State.....

U W



Series 44-75 for chassis having approximately 40" C.A. dimension.



Series 44-104 for single or dual rear wheel chassis having 60" C.A. dimension.



Series 44-L-90 for chassis having approximately 48" C.A. dimension.



Series 44-L-104 for 60" C.A. chassis having single or dual rear wheels.



PUBLIC UTILITY BODIES & EQUIPMENT

**McCABE-POWERS  
AUTO BODY CO.**

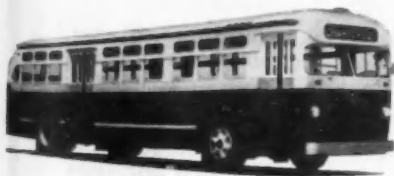
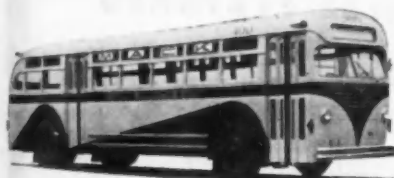
MAIN OFFICE AND PLANT  
5908 N. Broadway • St. Louis 15, Mo.

WESTERN OFFICE  
Latham Sq. Bldg. • Oakland 12, Calif.

## Torque converters require it Mack buses furnish it



...A ROSS EXCHANGER TO CONTROL  
HYDRAULIC FLUID TEMPERATURE



● During the heaviest rush hours, in the worst imaginable traffic congestion, these Mack C41, C45 and C50 buses are always off to a smooth, fast start. *They're torque converter equipped!*

But, frequent stops and starts, changing speeds, tough grades and broiling days can cause hydraulic torque converter fluid to overheat . . . unless, of course, adequate and dependable cooling is provided. *Mack plays safe by using Ross Type BCF Exchangers.*

Neatly mounted on the unit power plant (shown) these compact Ross coolers keep oil temperatures within the safest and most effective range. In this simple, relatively inexpensive way, neither Mack nor the transit company runs the risk of damage to delicate, close-fitting parts through seizure. Thus, a costly condition that could well ruin the whole torque converter, is averted.

The widespread use of all-copper and copper alloy Ross Exchangers for torque converters is only one of their important applications in the automotive industry. Like Mack, numerous bus, truck and engine

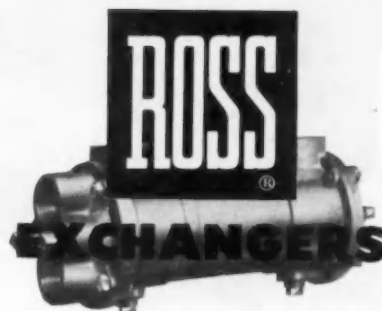
builders use them extensively to safeguard lube oil temperatures as well.

Fully standardized, pre-engineered and mass produced, Ross Type BCF Exchangers are the most logical answer to the production-minded automotive industry.

For details, request new Bulletin 1.1K5.

### KEWANEE-ROSS CORPORATION

DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION  
1442 WEST AVENUE • BUFFALO 13, N. Y.  
In Canada, Horton Steel Works, Limited, Fort Erie, Ont.



FOR ENGINES AND TORQUE CONVERTERS



*Serving home and industry*

AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON



*—for dependable starts!  
—for lower cost per mile!*

Delco batteries have what every fleet owner is seeking—a means of reducing operating costs. And in your own fleet is where Delco can best prove its economy. So choose Delco, the Nation's No. 1 Battery. It's the battery designed for lower operating costs, for rugged service, for longer life. Delco batteries are available everywhere.



**DELCO BATTERIES**

A GENERAL MOTORS PRODUCT   A UNITED MOTORS LINE  
**DISTRIBUTED BY WHOLESALERS EVERYWHERE**

### **EVERY DELCO BATTERY HAS THESE FEATURES**

**LONGER USEFUL LIFE!** In a severe *life performance test* Delco batteries showed retention of *maximum starting power* after months and miles of operation.

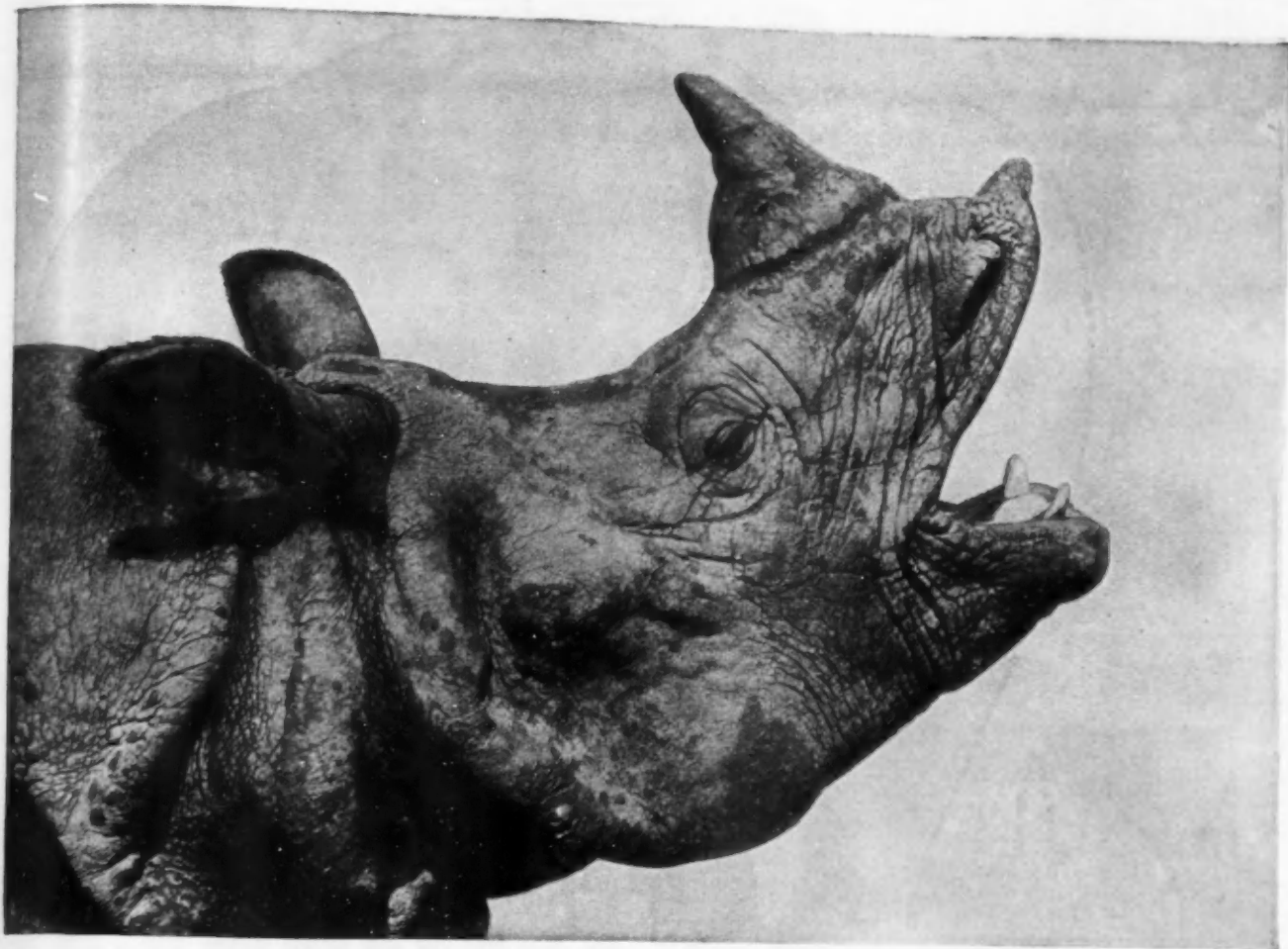
**NEW, SUPER-QUICK STARTS!** Exclusive patented "expander" formula used in making Delco negative plates produces greatly improved cranking action in cold weather.

**NEW RUGGEDNESS!** Exclusive high temperature vapor treatment of plates creates stronger, longer lasting bond . . . insures greater resistance to shock and distortion.

**NEW "BALANCED" GRAVITY RATING!** New "balanced" gravity gives Delco batteries greater freedom from trouble at extreme temperature ranges, resulting in longer life, finer all-round performance.

**PLUS "TAILORED" CASES!** Each battery model has its own case, sealed tight with special compound to prevent cracking and leaking. Visual filling device for instant servicing.





# TOUGH

... Like the "Film of Protection" You Get With

## VEEDOL 90 H.D.

**T**HAT extra toughness of VEEDOL 90 H.D. is a natural property of the 100% Pennsylvania crude oil from which this great motor oil is refined. It's one of the important reasons why VEEDOL 90 H.D. has tougher resistance to heat and wear ... gives longer mileage between major overhauls.

In VEEDOL 90 H.D. this naturally finer crude is expertly refined and blended with the scientific additives that reduce gum and sludge

in motors, protect bearings from corrosion, and minimize lacquering of pistons and valve stems... *even under continuous full-throttle operation!*

Give your fleet the advantage of this tougher "Film of Protection"... by specifying VEEDOL 90 H.D.!

**CLEANS  
AS YOU  
DRIVE!**



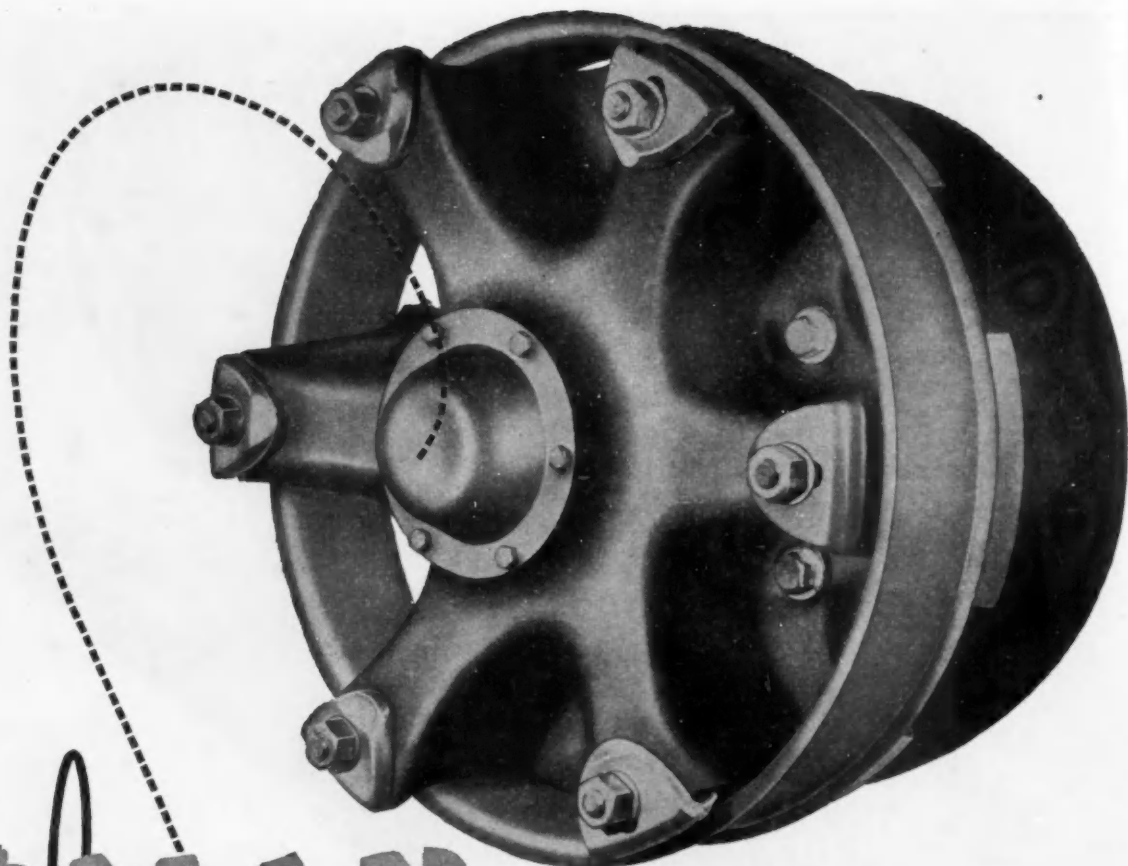
**TIDE WATER  
ASSOCIATED  
OIL COMPANY**



17 Battery Place, New York 4, N. Y. • Thompson Building, Tulsa 2, Oklahoma • 79 New Montgomery Street, San Francisco 20, Calif.

COMMERCIAL CAR JOURNAL, September, 1952

**221**



# **HOMAN** *Aluminum* **WHEELS**

**carry  
the  
big  
loads**



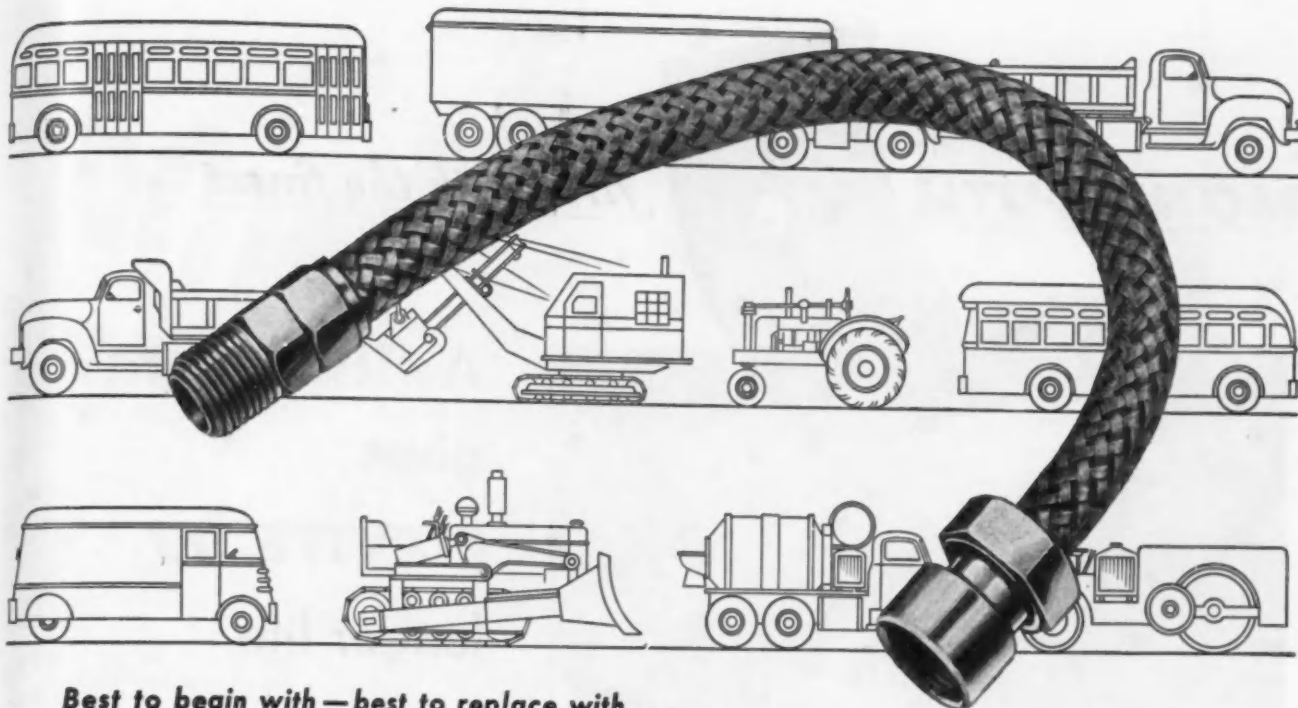
Less weight in wheels means more PAY load in trailer.

Homan Wheels are made of tough, durable, light-in-weight aluminum that saves an average of 100 lbs. per axle . . . never requires painting. Homan Wheels are built to stay on the road longer . . . give years of rough 'n ready service. For BIGGER loads . . . HEAVIER loads . . . the kind of loads that PAY OFF, equip your trailers with Homan Wheels. Available with 6" and 7" brake drums. Write for complete details today.

FOR FAST, DEPENDABLE SERVICE

SHIP BY TRUCK TRAILER

**HOMAN** *and Co. inc.*  
READING • CINCINNATI 15 • OHIO  
ESTABLISHED 1847



Best to begin with — best to replace with . . .

## TITEFLEX®

### Flexible all-metal hose

Want to cut maintenance and replacement costs of gasoline, oil, water and air lines?

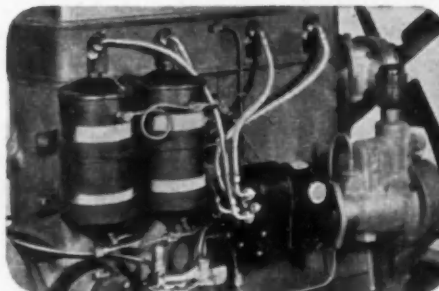
Replace those on your present equipment with TITEFLEX Flexible All-Metal Hose. And be sure your new equipment is fitted with TITEFLEX. You'll save money.

**Reason:** TITEFLEX does not crack, bake or deteriorate even when exposed to high engine temperatures. Gas, oil and other liquids have no effect on it. Yet TITEFLEX is fully flexible and withstands excessive vibration over long periods.

Longer service life actually makes TITEFLEX less costly than synthetics, rubber or fabric-packed hose. Our design and engineering staff will be glad to help you with your flexible tubing problems. Get the full story today. Send coupon for TITEFLEX literature—without obligation. Check off TITEFLEX ignition shielding, too, if you're having interference trouble.



Titeflex flexible metal hose fuel line to engine on a milk delivery truck. Operator's entire fleet of 76 trucks is Titeflex-equipped.



Titeflex Automotive Ignition Shielding Leads for the engine of a Le Roi Model 210G 2-Stage Portable air compressor.

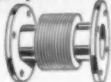
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**Titeflex**

✓ Check products you are interested in.



☐ SEAMED AND SEAMLESS METAL HOSE



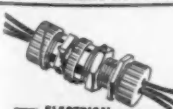
☐ PRECISION BELLWS



☐ IGNITION HARNESS



☐ IGNITION SHIELDING



☐ ELECTRICAL CONNECTORS



☐ RIGID AND FLEXIBLE WAVE GUIDES



☐ FILTERS



☐ FUSES

TITEFLEX, INC.

514 Frelinghuysen Ave.  
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Please send me without cost  
information about the products  
checked at the left.

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ZONE \_\_\_\_\_ STATE \_\_\_\_\_





**\*  
MONMOUTH**

*first with the finest*



## A nickel dam gives **CLEVITE\* 77** longer life

THE Clevite 77 is a tri-metal engine bearing made especially for severe service conditions. Its long life is due in part to a nickel barrier—or dam—which maintains the corrosion resistance of the bearing surface layer. This nickel dam is an exclusive feature of Clevite 77 bearings—developed by CGB engineers and fully patented by the company, it cannot be duplicated.

Comparative results prove the Clevite 77 gives unequalled service life in engines subject to overloading, lugging, overspeeding and continuous heavy-duty operation. Truck and bus owners, race car drivers and contractors operating heavy off-highway equipment report the Clevite 77 gives superior service life and saves money because it reduces the down time of costly equipment.

*Sold for replacement use under our Monmouth Brand, Clevite 77 bearings should be used only where engine manufacturers' specifications call for Clevite 77—the bearing with the nickel dam.*



*Your  
NAPA Jobber  
is a Good Man  
to Know!*



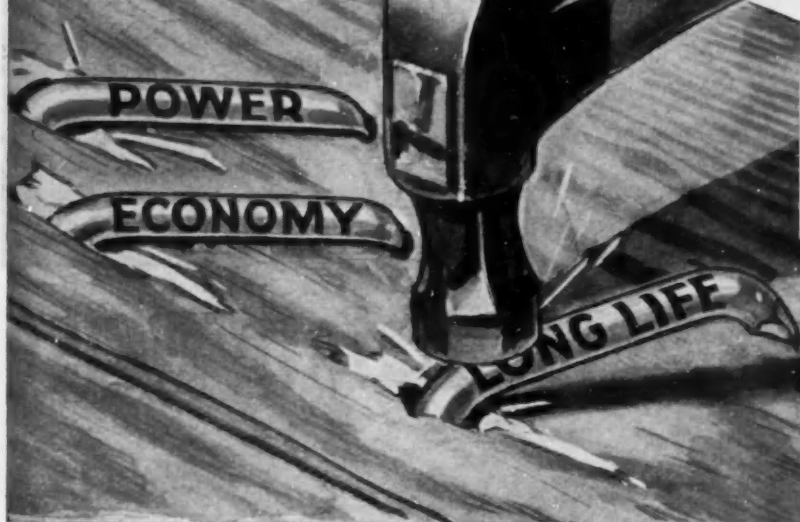
\*The words Monmouth, Clevite and Micro are registered trade marks of The Cleveland Graphite Bronze Co.

**THE CLEVELAND  
GRAPHITE BRONZE CO.**

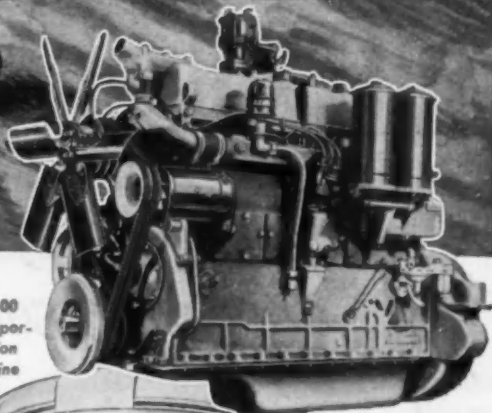
Cleveland, Ohio

**CGB FIRSTS:** The development of continuous strip casting, 1929—thinwall babbit lined steel-backed bushings, 1931—continuous casting of copper lead on steel strip, 1934—tri-metal bearings, 1938—Micro\* Bearings, 1939—Clevite 77, 1944—and others which have helped to revolutionize the lined bearing industry.

# Clinch all 3

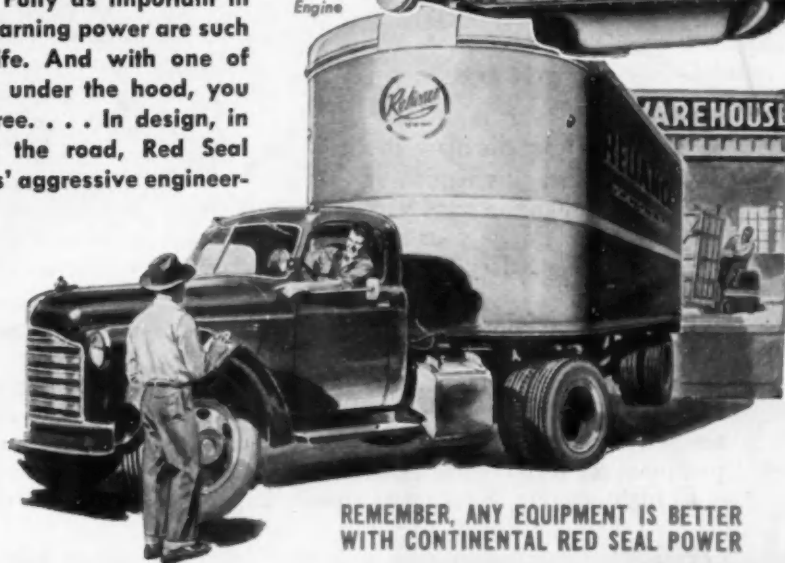


BALANCED IN ALL THE FACTORS THAT MAKE FOR OUTSTANDING PERFORMANCE, RED SEAL ENGINES ARE STANDARD IN LEADING MAKES OF EQUIPMENT, NOT ONLY FOR TRANSPORTATION, BUT FOR A WIDE RANGE OF APPLICATIONS IN INDUSTRY, AS WELL AS ON FARM AND RANCH.



R-600  
Transportation  
Engine

**VITAL AS IT IS**, horsepower rating is only one of several points about the engine which you should check carefully when investing in a truck or tractor. Fully as important in their bearing on the unit's long-range earning power are such factors as fuel economy and long life. And with one of today's Continental Red Seal engines under the hood, you get a balanced combination of all three. . . . In design, in materials, and in performance over the road, Red Seal engines give you the benefit of 50 years' aggressive engineering. Exclusive Continental features wring the power from the fuel. And traditional Red Seal ruggedness, carried to a new high, finds its natural reflection in rock-bottom upkeep costs. . . . You clinch all three main factors in profitable operation when you choose a truck with Continental Red Seal power.



REMEMBER, ANY EQUIPMENT IS BETTER WITH CONTINENTAL RED SEAL POWER



## Continental Motors Corporation

MUSKEGON, MICHIGAN

*...reduce driver fatigue...increase safety*



## SOLEX Heat-Absorbing Safety Glass



**N**ow you can eliminate much of the eyestrain, nervous tension and fatigue that ordinarily go hand in hand with long hours on the highway. Equip your trucks with Solex Heat-Absorbing Safety Glass — "the best glass under the sun."

By day, green-tinted Solex greatly reduces the glare of bright sunlight, protecting the driver against resulting eyestrain. And Solex's heat-absorbing qualities keep the interior of the cab ten to twenty degrees cooler than outside temperatures... keep the driver more alert.

In night driving, Solex offers equally impor-

tant protection by guarding the driver's eyes against headlight glare, permitting him to see without straining or squinting.

These special glare and heat-reducing properties of Solex are combined with all the perfect-vision qualities of regular ground and polished plate glass to assure the best visibility at all times and in all directions.

Solex is a product of Pittsburgh Plate Glass Company, and all the well-known types of Pittsburgh Safety Glass—Duplate, Duolite and Herculite—are now available in Solex as well as conventional clear glass.

Take advantage now of the extra comfort that Solex makes possible. Specify it for your new vehicles and begin a planned program of replacement with Solex in your present equipment. For complete information and descriptive literature, write to Pittsburgh Plate Glass Company, Room 2240-2, Grant Building, Pittsburgh 19, Pennsylvania.



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY



# "FRAM Radiator and Water Cleaner Stops Engine Overheating"



## Says Prominent Fleet Operator

"One of our trucks seriously overheated during a run from London, Ontario, to Halifax, Nova Scotia. . . . We installed a Fram Radiator & Water Cleaner. . . . The temperature gradually returned to normal and the rest of the trip was made without incident. Later examination showed the filter cartridge to be filled with rust and scale, while the coolant appeared to be clean. . . . We are now installing Fram Radiator & Water Cleaners on all our trucks . . . believe they will more than pay for themselves by avoiding lost time and expense due to cooling system troubles."

Fleets everywhere are discovering the time- and money-saving value of Fram Radiator & Water Cleaners. They filter out solid particles . . . soften water . . . inhibit the formation of rust and scale . . . keep cooling systems operating at top efficiency. Get a Fram Radiator & Water Cleaner today . . . install it on one of your vehicles . . . and see for yourself!

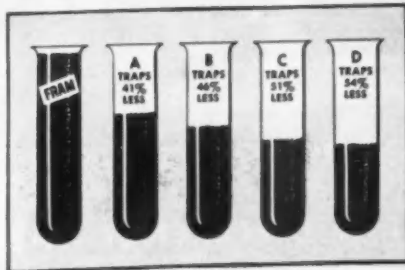
FRAM CORPORATION, Providence 16, R. I. In Canada: J. C. Adams Co., Ltd., Toronto, Ontario.



Actual tests prove that

## FRAM FILTERS BEST

This chart shows the results of exacting laboratory tests, proving that Fram traps from 69% to 114% more dirt than other oil filter cartridges tested! Fram gets oil cleaner, cleans it faster, keeps it clean longer . . . to assure you lower-cost-per-mile operation!



# FRAM

OIL • AIR • FUEL • WATER

## FILTERS

IF IT'S GALION EQUIPPED  
*It's Right* ON THE JOB!



Ask an operator of Galion equipped dump trucks what he thinks of Galion hydraulic hoists and allsteel dump bodies. Chances are he will say: "They're right on the job!"

And that's as good a recommendation as any . . . and it's language anyone can understand.

But why not check up on Galion equipment when next in the market . . . get the low-down on Galion's famous ABC combination . . . where an exclusive Fulcrumatic lift ACTION unites with perfect operating BALANCE and quality CONSTRUCTION to provide top performance for a long, long time.

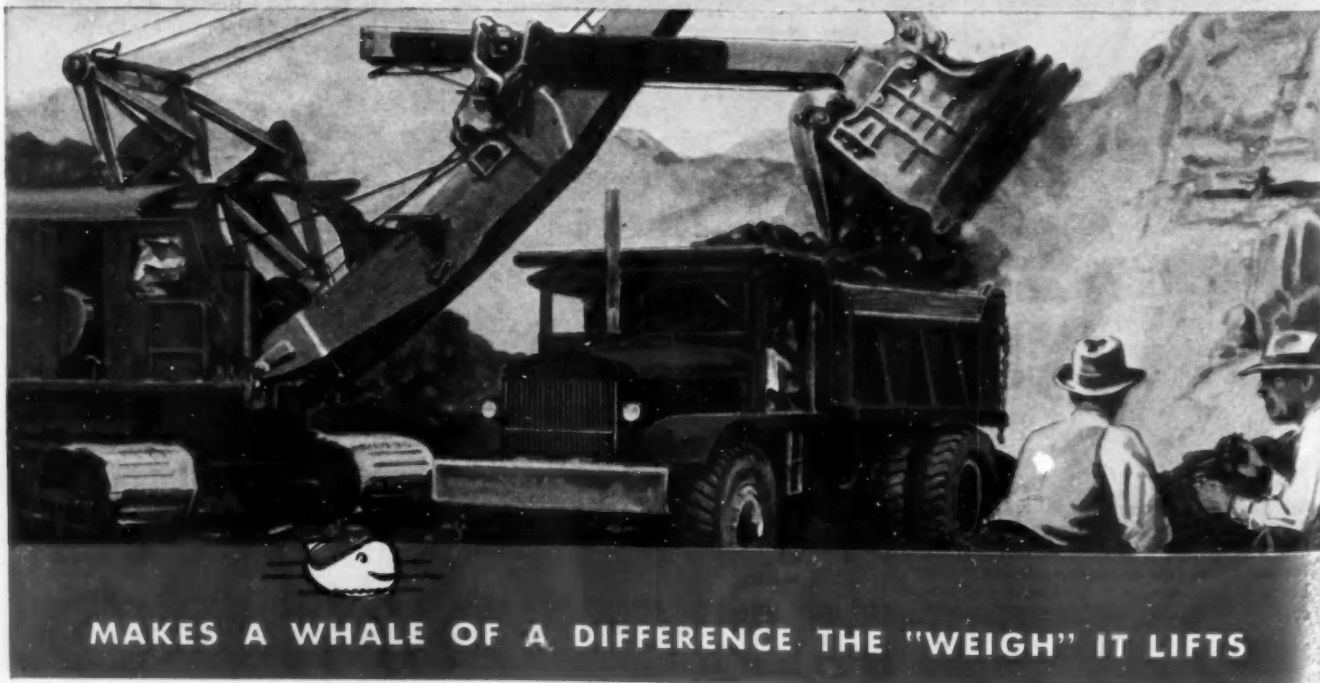
There's a Galion distributor right near by, ask him to demonstrate equipment that will be Right on Your Job! No obligation.

Scientifically positioned fulcrums and transfer linkages automatically "shift" the load at different points, eliminating lift-shock and smoothing out lifting action throughout the dumping cycle. The result is longer hoist, body and chassis life . . . better dumping performance!

*Sales and Service*  
FROM  
*Coast to Coast*

**GALION**  
ALLSTEEL BODY COMPANY  
GALION, OHIO

**A** exclusive hoist  
*Action*  
**B** perfect operating  
*Balance*  
**C** proved quality  
*Construction*



# NEW...a Pressurized V.L. Extinguisher!

## *Fyr-Fyter* PRESSURIZED Model B

### FEATURES FAST, ONE-HAND OPERATION WITH ACCURATE, ON-TARGET CONTROL!

Just aim, and squeeze the grip... a simple, fast, one-hand operation for anyone! There's no pumping or any other manual operation to hinder a direct, on-target hit! The positive force of moisture-free, pressurized nitrogen expels a powerful 30 foot stream of fire killing vaporizing liquid. The entire charge is expelled in 17 to 25 seconds... smothering flames faster when split-seconds count! Simplified design and construction facilitates easy inspection, cleaning, and recharging. It provides effective extinguishing action at any angle. Will not conduct electricity, deteriorate, or freeze. For faster, positive action, use Fyr-Fyter Pressurized Model B on burning liquids, live electrical fires, and also small general combustible fires. Available in one and two quart sizes. All Fyr-Fyter Extinguishers are approved by Underwriters' Laboratories!

See your Fyr-Fyter Sales and Service Representative today, or mail the coupon for complete information... NOW!



## *Fyr-Fyter*

(PIRE) (FIGHTER)  
THE FYR-FYTER CO.  
DAYTON 1, OHIO

The Fyr-Fyter Co.  
Dayton 1, Ohio

Please send complete information on the New Pressurized Model B Extinguisher.

Name

Address

City  State

Firm Name



# Advance-Design CHEVROLET TRUCKS

These  
**PLAIN HARD FACTS**  
are important to  
economy-minded  
truck buyers



## Fact No. 1

### CHEVROLETS LIST FOR LESS

First cost—the list price—is less for a Chevrolet than for any comparable truck capable of handling the same payload. Chevrolet's position as the world's largest manufacturer of trucks makes possible production savings that are passed on to you.

## Fact No. 2

### COST LESS ON THE JOB

Proved Chevrolet truck features save money over thousands of miles. Time-tested Valve-in-Head engines, rugged hypoid rear axles, extra-sturdy channel-type frames, Flexi-Mounted cabs, Ball-Gear steering, Synchro-Mesh transmissions, all contribute to low operating costs with high dependability.

## Fact No. 3

### EACH TRUCK TAILORED TO ITS JOB

Every Chevrolet truck is factory-matched to the job it's going to do. Tires, axles, frame, springs, engine, transmission, and brakes are right for the operating conditions and load. Whatever your job is, there's a Chevrolet truck to fit it.

## Fact No. 4

### WORTH MORE AT TRADE-IN TIME

Chevrolet trucks traditionally bring more at resale than other makes costing about the same when new. Chevrolet trucks keep their value longer and give you real, substantial savings right up to the day you sell them. See your Chevrolet dealer soon.

### CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

**TWO GREAT VALVE-IN-HEAD ENGINES**—Loadmaster or the Thriftmaster—to give you greater power per gallon, lower cost per load • **POWER-JET CARBURETOR**—for smooth, quick acceleration response • **DIAPHRAGM SPRING CLUTCH**—for easy-action engagement • **SYNCHRO-MESH TRANSMISSION**—for fast, smooth

shifting • **HYPOID REAR AXLE**—for dependability and long life • **TORQUE-ACTION BRAKES**—on light-duty models • **PROVED DEPENDABLE DOUBLE-ARTICULATED BRAKES**—on medium-duty models • **TWIN-ACTION REAR BRAKES**—on heavy-duty models • **DUAL-SHOE PARKING BRAKE**—for greater holding ability on heavy-

duty models • **CAB SEAT**—with double-deck springs for complete riding comfort • **VENTILATION PANES**—for improved cab ventilation • **WIDE-BASE WHEELS**—for increased tire mileage • **BALL-TYPE STEERING**—for easier handling • **UNIT-DESIGNED BODIES**—for greater load protection • **ADVANCE-DESIGN STYLING**—for increased comfort and modern appearance.

CHEVROLET DIVISION OF GENERAL MOTORS, DETROIT 2, MICHIGAN



**KS**

than for any  
the payload.  
manufacturer of  
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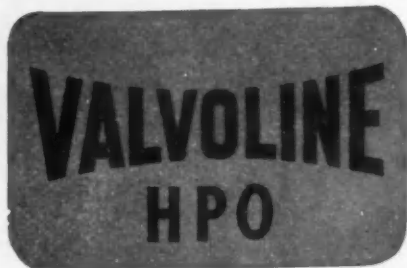
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ber, 1952



## How to find out whether you're draining your oil too soon, or not soon enough

There's no positive mileage at which oil should be drained in a fleet. You might be robbing yourself of useful oil mileage every time you drain. Or you might be getting excessive wear in your units by using your oil too long.

## Our free Fleet Lab Service does away with guesswork

Even the largest fleet couldn't justify installing a costly laboratory like ours. But because so many fleets are regular users of Valvoline HPO, we can furnish this valuable oil drain analysis service free to our customers. Many fleets, large and small, depend on it constantly.

## What this free service will do for you

After you have tried Valvoline in your fleet for your usual drain period, send us a quart sample of the drain. We will make a detailed laboratory analysis and send you the results, correlated with your operating conditions, together with our recommendations. Such tests show you how to get economically safe mileage from your oil without risking excessive engine wear. And they sometimes reveal hidden facts about the operation and maintenance of your units that you'll be glad to know.

Your use of Valvoline will show you why so many fleets use Valvoline exclusively—saving on oil and mechanical upkeep.

## Do this now:

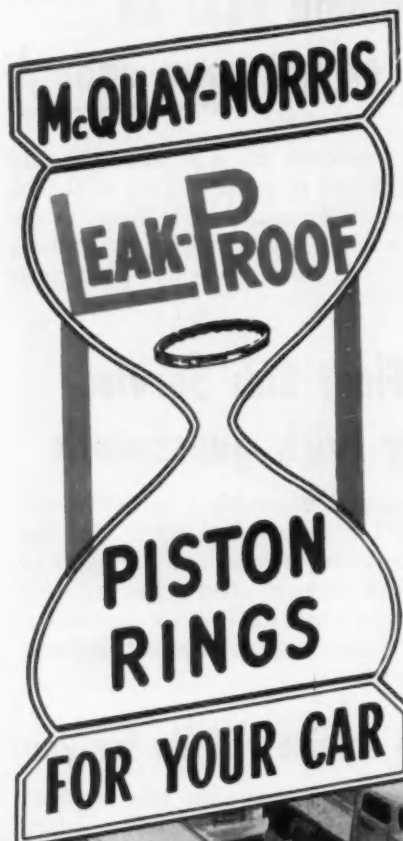
Ask your Valvoline man how you get Free Fleet Lab Service or write: Freedom-Valvoline Oil Company, Freedom, Pennsylvania (An Affiliate of Ashland Oil & Refining Company)

**Saves Grief—Saves Money on Heavy Duty Lubrication**

**BRANCHES:** NEW YORK, TORONTO, PITTSBURGH, JACKSONVILLE, ATLANTA, DETROIT, CINCINNATI, CHICAGO, LOS ANGELES, SAN FRANCISCO, PORTLAND, SEATTLE, VANCOUVER, B. C.

COMMERCIAL CAR JOURNAL, September, 1952

# Cut Costs-Boost Mileage



## WITH **LEAK-PROOF** REG. U. S. PAT. OFF. **PISTON RINGS**

LEAK-PROOF rings *boost mileage* because of  
*Altinizing*—a tough, protective coating  
against scuffing, wear and acid action ...  
included at **NO** extra cost to you!

And LEAK-PROOF rings *cut costs* because they do  
a good job ... lengthening the time  
between re-ring and overhaul jobs.



**McQUAY-NORRIS MANUFACTURING CO.**  
ST. LOUIS 10, MO.



# Performance that stands out!

● No other manufacturer can duplicate Ditzler's record of consistently *dependable performance* in the field of automotive finishes. That's why Ditzler finishes have been used year after year for nearly half a century by most of the builders of passenger cars, trucks and buses. This continuous preference has

lifted Ditzler to its present position as the foremost *exclusive* manufacturer of automotive finishes. Because Ditzler finishes are rated as best by those who build automotive vehicles, it is reasonable to conclude they should also be the most efficient, most economical and most satisfactory for refinishing needs.



Save time, effort and cost with

## DITZLER TWO-STAR\*\* Materials!

● You can't buy better lacquers for automotive refinishing. Thinned with Ditzler Two-Star\*\* Thinner, DTL-113, Ditzler Two-Star\*\* Lacquers flow on so smoothly that little compounding is required. Two-Star\*\* Polishing Cleaner, DRX-4, gives a brilliant lustre. Use Two-Star\*\* Polishing Compound, DRX-25, if color is sprayed a little dry, or over-spray is rough. Two-Star\*\* Gloss Undercoat, DL-900, eliminates sand scratches in old lacquers. You'll find these materials ideal for small touch-up spots on baked enamel jobs. They are also deluxe materials for all-over jobs in lacquer.

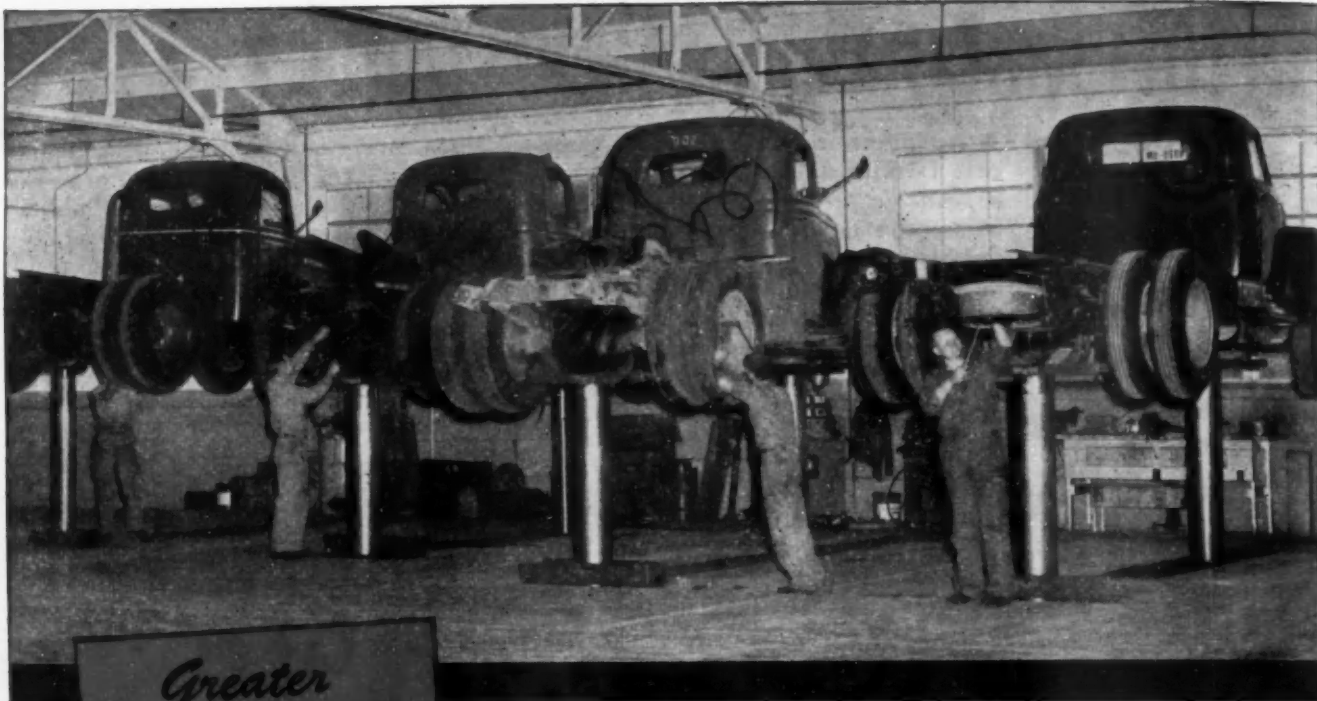
DITZLER COLOR DIVISION, Pittsburgh Plate Glass Company, Detroit 4, Michigan

# DITZLER



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY



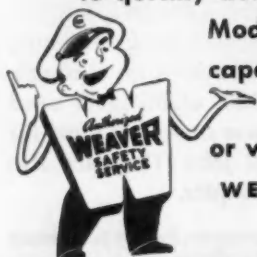
*Greater  
ACCESSIBILITY...  
Greater  
CONVENIENCE...  
Greater  
EFFICIENCY...*

## The **WEAVER** Twin Post Lift has *NO RAILS* in the *WAY*!

Actual time studies on a wide variety of mechanical service operations have shown 25% to 100% increased production with Twin Posts over ordinary methods. With trucks up in the air, mechanics can get at work faster with greater convenience and less fatigue. More types of jobs can be done on Twin

Posts because of the greater accessibility offered by these modern lifts with *no rails in the way*.

Twin Posts are ideal for a busy shop because they sink into floor out of way when not in use, and can be driven over from any direction. Either post raises independently to offer the most convenient working angle for every job. Adjustable front post allows Twin Post to quickly accommodate any length wheel base.



Model EC-106, electrically operated, has capacity of 36,000 lbs. For complete details consult your Weaver jobber, or write us.

**WEAVER MANUFACTURING COMPANY**  
Springfield, Illinois, U.S.A.

### LOW OIL LOCK

A new development by Weaver engineers, guarantees that lift plungers on any air-oil operated lifts will not be raised on air should oil supply become low. An important safety feature that adds greatly to the life of the lift.



WEAVER

SERVICE SHOP EQUIPMENT

SAFETY LANES

BRAKE TESTERS AND  
WHEEL ALIGNMENT TESTERS

ALIGNMENT EQUIPMENT

WHEEL  
COUNTERBALANCERS

TWIN  
POST  
LIFTS

AIR  
COMPRESSORS

UNIT LIFT

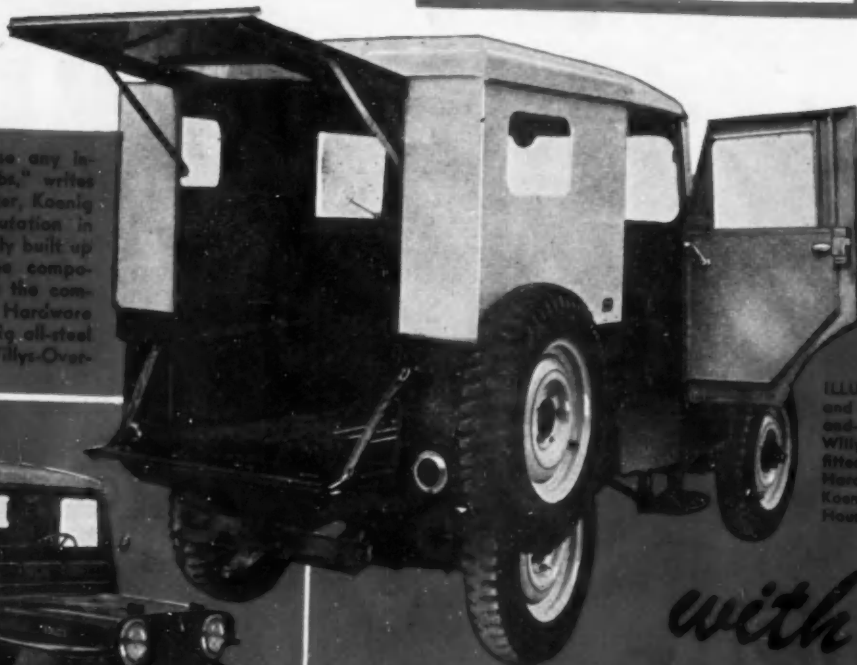
LOW-NOISE HYDRAULIC JACKS

WHEEL  
DOLLIES

# the Tougher the Service the Better

**Koenig**

"We cannot afford to use any inferior material in our cabs," writes J. H. Parker, Sales Manager, Koenig Iron Works, "as our reputation in this field has been gradually built up chiefly on the trouble-free component parts which comprise the complete cab unit." Hansen Hardware is incorporated in all Koenig all-steel full and half cabs for Willys-Overland Jeeps.



ILLUSTRATED above and at left are open and closed views of Willys-Overland Jeep fitted with Hansen Hardware, cabs by Koenig Iron Works, Houston, Tex.



*with*

## HANSEN

The Hardware for Hard Wear

WRITES J. H. Parker, Sales Manager, Koenig Iron Works: "We have used your combination of outside handles and inside latches for over four years, with no complaints of that equipment reaching us."

"As you know, we also use locking door handles and complete locking tailgate on a good many of our cabs upon customer specification. Your locking door handle and locking tailgate element have proven equally satisfactory, and we wouldn't consider making any change in our source of that type of equipment."

Built for service, Hansen gives it on all types of bodies, cabs, tanks, trailers, etc. Make Hansen your standard.



No. 85 Cab Lock (left-hand) with inside handle. Size, 3 1/4" high, 2" wide, 3/4" handle. 1" strike bolt. Built-in pull handle integral with lock bushing. Flange on face of lock makes it easy to install. No mortising. Weight, 1/2 lb.

No. 75 All-Steel "T" Handle. Grip, 3 1/2" x 1/2". 5/16" square steel shank 3" long. Fits all standard locks. A rugged handle, well balanced, with liberal gripping surface. Withstands continual, severe service. Weight, 5 ozs.



ask for  
catalog

## A.L. HANSEN MFG. CO.

5047 N. RAVENSWOOD AVE. CHICAGO 40 ILL.



**BUS COMPANY TESTS  
4 OILS . . . . .**

**Then  
Chooses**



**DHD**



**AMARILLO BUS COMPANY NOW USES  
D-X DHD MOTOR OIL**

***Exclusively***

Yes, a 6-month test, under actual conditions, against three other oils of comparable quality, definitely established the superiority of D-X DHD Motor Oil with Extrinol for the Amarillo Bus Company.

In one section of the test, D-X DHD Motor Oil was run to 16,000 miles between change periods and the oil was still in good condition! Today, using D-X DHD exclusively, the Amarillo Bus Company is steadily reducing its oil costs per mile.

The secret of D-X DHD's superiority is the famous D-X "extra" of Extrinol that gives it amazing resistance to sludging, corrosion, foaming and wear. It helps D-X DHD stand up under grueling operating conditions.

You can obtain similar results in your operations, and we invite you to make a test of this great motor oil in your own equipment *at our expense*. If you're interested, and are located in the Middle West, write to us today on your letterhead.

**MID-CONTINENT PETROLEUM CORPORATION  
Tulsa, Okla.**

Waterloo, Ia.

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Chicago, Ill.

Minneapolis, Minn.

**Thor**

# ANNOUNCES A NEW AIR IMPACT WRENCH

With Exclusive Rolling Ball Type Cam!



Spectacular results in field tests conducted during the past year have fulfilled all performance promises of Thor's "rolling ball"—an exclusive new cam design incorporated in Thor 3/8" Air Impact Wrenches now being delivered to the trade.

The new cam design permits drawing threaded fasteners down faster and tighter BEFORE IMPACTING—the operation is speeded and fewer impact blows are required for final tightening.

Coupled with a large overload capacity, the new type wrenches are only moderately stressed in performing work within their rated capacity, resulting in greatly increased normal working life.

Basically designed to produce the ultimate in tightness in all threaded fasteners such as nuts, bolts, lag screws, etc., these tools can also be used for tapping, for drilling in concrete, metal or wood, and for producing large diameter holes with hole saws or similar type cutters.

ILLUSTRATED ABOVE—Thor "No. 24" Air Impact Wrench, 3/8" Bolt Size Capacity. New Machine weighs 5 3/4 lbs., is 8-11/16" long overall.

For Details or Demonstration Write  
**INDEPENDENT PNEUMATIC TOOL COMPANY**  
AURORA, ILLINOIS  
Branches in 20 Principal Cities

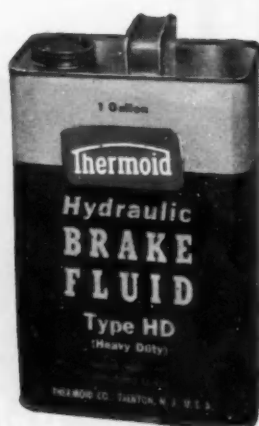
**Thor**

PORTABLE POWER

**TOOLS**

**ELECTRIC • PNEUMATIC**

**you can't  
afford  
to use  
anything  
but  
Thermoid**



Brake lining . . . hydraulic brake fluid . . . hydraulic brake parts—these are the three vital links between pedal pressure and smooth, *safe* stops. Any compromise with quality anywhere along the line means a weak link—the constant threat of brake failure in an emergency!

You just can't take a chance on "bargains" in brake lining, hydraulic fluid, or hydraulic brake parts. You *can* depend on Thermoid to provide maximum safety at the lowest cost per mile. Remember! Thermoid and safe braking are synonymous.

**Thermoid**

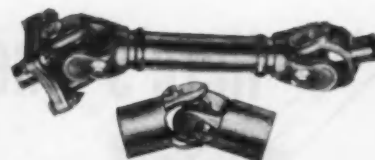
Thermoid Company • Trenton, New Jersey

the standard of precision processing in brake lining, brake blocks, hydraulic fluid, cylinder assemblies, hydraulic brake parts.



# The Correct JOINT for Every Industry and Type of Application

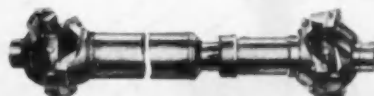
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for  
Automobiles



for  
Trucks



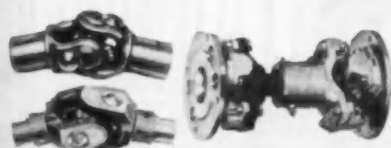
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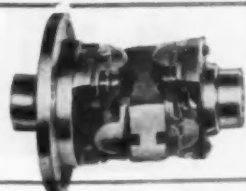
for  
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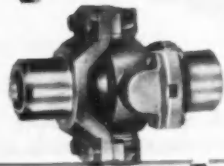
for  
Helicopters



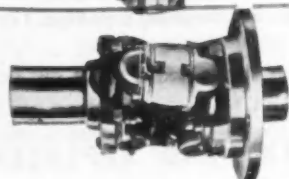
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For Cars, Trucks, Tractors, Farm Implements,  
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We make only *Roller Bearing* universal joints. Sizes range from 200 to 50,000 foot pounds torque, with a wide variety of end fittings and shaft arrangements. Practical design, close-tolerance machining and controlled-grain metals assure smooth running joints and long, trouble-free service. For information about MECHANICS Roller Bearing UNIVERSAL JOINTS, write—

## MECHANICS UNIVERSAL JOINT DIVISION

**Borg-Warner**

2034 Harrison Ave., Rockford, Ill.

# Here's where delay can mean disaster!

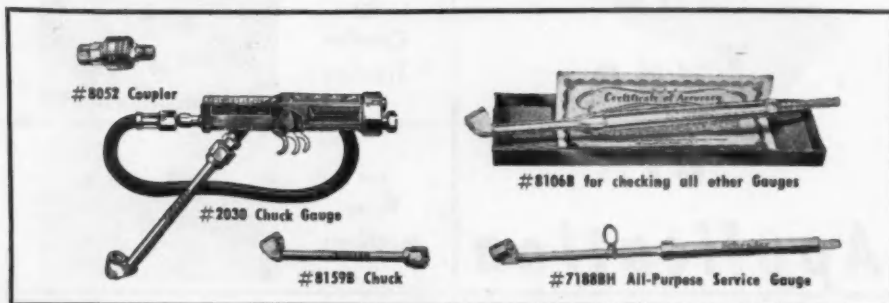


Fleets of public utility trucks *must* be in shape to go—and go quickly. That's another reason why tire maintenance is a *must*. Whether your fleet services cables or delivers freight—proper tire maintenance is your big step to avoid stalled loads due to flat tires.

**Tire maintenance is easier,  
better with Schrader Products**

Start by certifying *all* your gauging

equipment with Schrader 8106B Trutest Special Gauges. Keep airlines working properly with Schrader Air Chucks, Couplers, Chuck Gauges and Accessories. Then too, there's the handy, accurate 7188BH all-purpose service gauge for all your tire inspection. Don't let flat tires catch you on the road and pull your profits down. Is your air service equipment up-to-date? Order quality Schrader Products from your supplier now!



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Division of Scovill Manufacturing Company, Incorporated  
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FIRST NAME IN TIRE VALVES  
FOR ORIGINAL EQUIPMENT AND REPLACEMENT



#### PACKARD LOW-TENSION CABLE WITH EXCLUSIVE "249" INSULATION

This amazing development gives a protective covering that is two to three times more resistant to abrasion . . . resists flame . . . is oil and acid proof . . . more resistant to temperature changes. And it has greater dielectric strength—nearly 50 per cent more than many other cables. Here's longer life and safety—at low cost. Single and two-conductor types . . . full range of sizes.



#### PACKARD ENGINE-COMPARTMENT CABLE

A Packard "special" for use in the rugged operating conditions of truck and bus engine compartments. Special glass braid is sealed between two walls of synthetic insulation to give extreme toughness and stability. Defeats the effects of high heat, oil and gas vapors, cleaning compounds and live steam. Used by leading bus and truck manufacturers for original installation. Available in sizes from 16 to 8 gauge.

## *Fleet Operators—* Cut "Down Time" with **PACKARD** **AUTOMOTIVE CABLE**

Solve your truck or bus rewiring problems the long-life, low-cost Packard way—with Packard Cable that's specially designed for the individual application.

*For all automotive wiring needs, see your Packard jobber.*



#### PACKARD TRAILER FLEX-O-CORD

Another Packard "special design," Trailer Flex-O-Cord is made with a heavy rubber jacket protecting the conductors. Braid and jute fillers cushion the wires and give needed flexibility. Gives more dependable service at lower cost per vehicle mile. Made with four, six and seven conductors.

**Packard**  
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Packard Electric Division, General Motors Corporation  
Warren, Ohio



#### PACKARD BATTERY CABLES

Packard battery cables are used as original equipment on more cars, trucks, buses and tractors than cables of any other make. Packard battery cables are full size, full weight . . . are available with LEADALLOY terminals or leaded-brass terminals. Both types deliver top performance under severest operating conditions—both have acceptance, everywhere.



#### PACKARD FOUR-FORTY CABLE

Here's the world's finest high-tension ignition cable, with added resistance to heat, cold, moisture, abrasion, oil, corona and age. Special outer sheath, and high-grade rubber insulation underneath, combine to give this cable outstanding performance characteristics proved over and over in both laboratory tests and fleet service. Naturally, Packard Four-Forty Cable is today's leader in the replacement field.

**FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING**



# Johns-Manville Information Service Bulletin J-M 101

Prepared by the Automotive Friction Material Division

## Notes on the heat-checking of brake drums



With today's heavier loads and faster road speeds placing more severe demands on brakes, there has been an increase in drum failure due to heat checking.

This dangerous and expensive evil usually appears first in the form of hair-line cracks across the friction surface. Each of these fine cracks tends to increase in length and depth for as long as unfavorable conditions exist. Failure comes in a drum that has been so weakened by cracks that it eventually breaks in several places at the instant of a sudden brake application.

### Fatigue brings fracturing

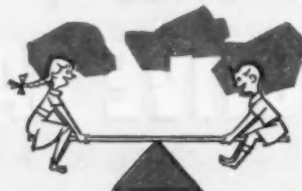
Heat checking is probably due to a form of fatigue in the drum metal. During a heavy application of the brakes, the temperature of the friction surface of the drum may rise suddenly to a very high figure, while opposite surfaces, which are exposed to the outside air, remain cool. This great difference in temperature, occurring within a thin cross-section of metal, sets up severe strains.



The cracks which appear initially are too fine to be detected by the naked eye. However, repetitions of the severe heating-cooling cycle cause the cracks to expand and progress until fracturing occurs.

In recent years, the heat-checking of brake drums has become such an important problem that Johns-

Manville designed and built a special laboratory machine for quickly determining the tendency of a brake block to cause drum cracking. This machine runs day and night at the Johns-Manville Research Laboratory, producing a wealth of data that is proving immensely valuable to friction materials engineers. It has been found, for instance, that some brake lining structures—notably those which are slightly resilient—will greatly reduce the tendency toward heat checking of drums and give considerably longer lining service life as well.



### Balance is important

It has also been found that correct "balance" of a brake system is extremely important in eliminating drum failure. If the brakes

on one wheel are doing more than their share of work, that drum will naturally be subjected to abnormal temperature changes during heavy braking periods. If one drum on a vehicle is a chronic heat checker, it is usually a signal that it is doing more work than it should.

**REMEMBER**, it is cheaper to replace brake linings than drums . . . in fact it is often 2 to 1 in favor of the lining.

If you would like to know more about Johns-Manville friction materials designed especially for heavy-duty brake service, write for your copy of "The Fleet Reliner's Manual." Address: Johns-Manville, Box 60, New York 16, New York.



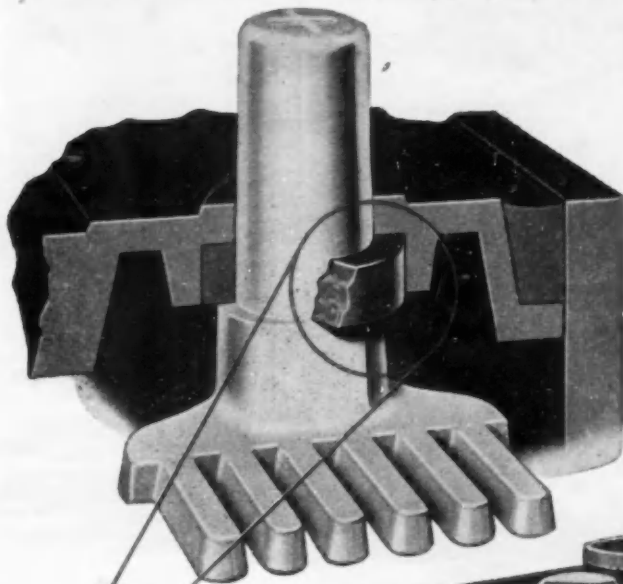
Watch for the next Information Service Bulletin  
by Johns-Manville, to appear soon in this publication.



**Johns-Manville** *Asbestos* **FRICTION MATERIALS**  
BRAKE LININGS • BRAKE BLOCKS • CLUTCH FACINGS

# Globe-Union Posts

help make your trucks "battery happy"



ONLY GLOBE BATTERIES have rubber bushings on all posts — sealing covers for the life of the battery.

This shock-proof construction eliminates cover breakage and chipping away of sealing compound . . . avoids snapping of terminals. Exclusive design permits use of full-size posts below the cover. Plate life is extended because of reduction of vibration — assuring GLOBE customers of the most for their battery dollar.



If it's engineered and made by Globe Union—it's RIGHT FROM THE

**START**

Globe-Union builds quality batteries for original equipment and for mass merchandising under the trade names of GLOBE SPINNING POWER and leading private brands.

**GLOBE-UNION**

"NONSPILL" safety vents prevent acid spilling over — protect adjacent vehicle parts.



PEBBLED SURFACE and staggered construction of interlocking V-shaped grid bars hold superactive oxides in place — assure longer life.



HIGH-POROSITY separators permit quick release of power.



CHEMICALLY SET plates promote more power, prolong battery performance.



## GLOBE-UNION INC. MILWAUKEE 1, WISCONSIN

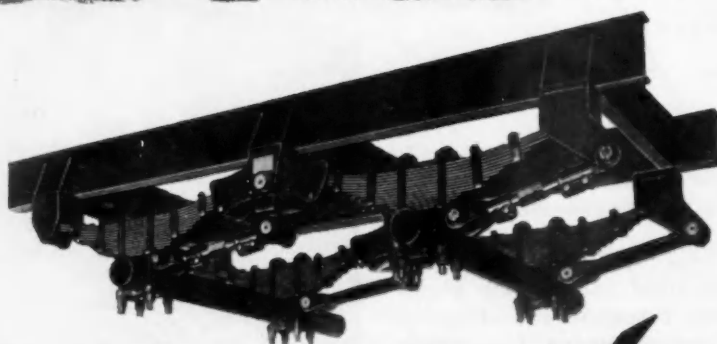
Battery Production Plants At: ATLANTA, GA. • BOSTON, MASS. • CINCINNATI, O. • DALLAS, TEXAS • EMPORIA, KANS. • HASTINGS-ON-HUDSON, N. Y. • LOS ANGELES, CALIF. • MEMPHIS, TENN. • MINERAL RIDGE, O. • OREGON CITY, ORE. • PHILADELPHIA, PA. • REIDSVILLE, N. C.

COMMERCIAL CAR JOURNAL, September, 1952



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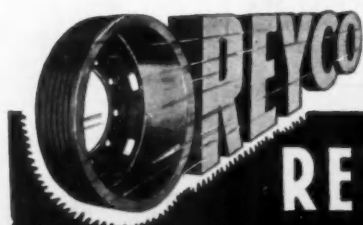


*suspension!*

THERE IS NOTHING ELSE IN TANDEMS TO COMPARE  
WITH THE FLOATING RIDE AND ECONOMY OF  
**REYCO!**

It cradles delicate cargo safely—whether  
dry, refrigerated or liquid!

Maintenance problems eliminated!  
Write for descriptive literature.



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**SALES AND SERVICE  
COAST-TO-COAST!**

## REYNOLDS MANUFACTURING CO.

SPRINGFIELD, MISSOURI



your truck engine can be  
*doubly* useful!



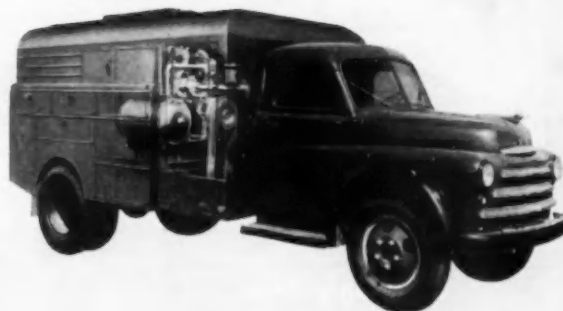
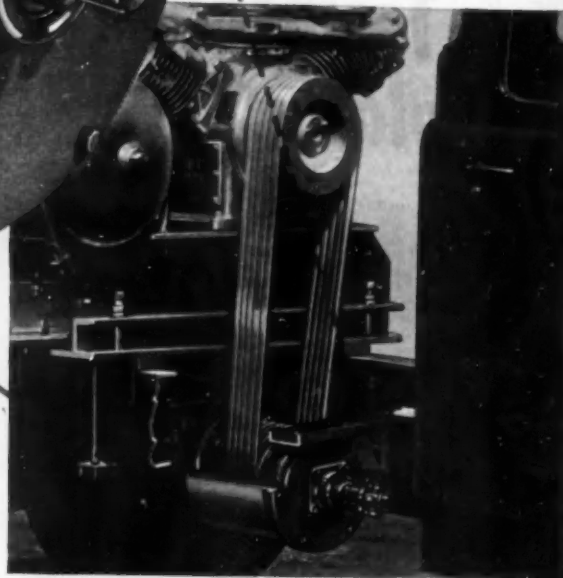
with a  
**CEMCO**  
**POWER TAKE-OFF**

By means of this practical Power Take-off you can divert the full power of your truck motor to operate equipment on the truck such as the application illustrated at the right. Here the CEMCO does an admirable job of transmitting the truck motor's power to operate the well-known Jaeger "Travel-air" Compressor.

Only four moving parts (other than bearings) on this CEMCO Take-off. No gears, no power loss, no distorting pull. It turns the same number of revolutions as the drive shaft and delivers the full power of the truck motor through any position forward or reverse speed of the transmission.

Get additional information from the Jaeger dealer near you or, write the factory.

CEMCO INDUSTRIES, INC. • Galion, Ohio



**CEMCO** *Split-Shaft*  
**POWER TAKE-OFF**

COMMERCIAL CAR JOURNAL, September, 1952

245

# Gatke

## BRAKE LINING

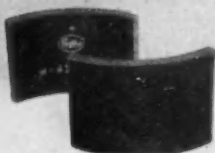
*For the man who wants the best*

**Tremendous  
Holding Power**

**Smooth Deceleration  
Non-Squealing  
Easy on Drums  
Long Wear Life**



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**GATKE BRAKE BLOCKS and Liners are made for every  
age, size, type and make of automotive brake.  
Ask your GATKE JOBBER or write.**

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ASBESTOS BRAKE LINING FOR EVERY PURPOSE • • MOULDED ASBESTOS FRICTIONS—ALL SHAPES  
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for **BOTH**  
voltages...

12



SUN  
makes it easier  
for you

**to service the trucks of today...and tomorrow**

**...with test equipment in advance of the times**



DON'T GUESS-TEST!

Here is an exceptional opportunity offered by SUN to every fleet owner... an opportunity to prepare and modernize—in advance—for new and revolutionary developments in the automotive industry.

Available NOW... is the newly engineered SUN Master Motor Tester and Accessory Group for completely and accurately testing both 6 and 12 volt automotive engines. Each of these new units has been designed to make every test on 6 and 12 volt systems in compliance with the car and truck manufacturer's approved methods. It is now possible, with this new SUN Equipment, to modernize your testing department today—in the sure knowledge that these new units will not only service the cars and trucks of the present—but those of tomorrow as well.

To help you modernize... SUN has developed a Modernization Plan that tells you how easily you can convert your shop and equipment—with new 6-12 volt units... how your old 6 volt testers can be used as a valuable trade-in. Prepare for tomorrow—today! Talk to your nearest SUN Representative—or write directly to us for complete information on the Modernization Plan.

SUN Equipment is also available for fleet and military use—in 6-12-24 volt units.

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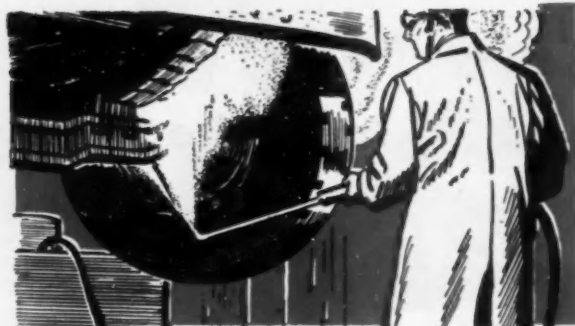


# Multi-Purpose **UNOBA** Means "Economic and Dependable Lubrication at All Times," says Draying Company Executive

The J. A. Clark Draying Company, Ltd., in San Francisco, operates 50 trucks in complete drayage and warehouse service. UNOBA grease is used throughout the fleet as a chassis lubricant. J. A. Clark, Jr., vice-president of the company, says: "UNOBA grease has proved to be valuable to our operations from a standpoint of economic and dependable lubrication at all times."



Fleet owners everywhere find UNOBA is *economical* because it is one grease that answers practically all heavy lubricating problems. With UNOBA only one gun and one container need be used in most cases. Thus UNOBA holds stock inventory to a minimum, saves you time and cuts equipment costs.



**UNOBA** is *dependable* because it resists both heat and water. Even steam cleaning and boiling water fail to affect this highly adhesive grease. And multi-purpose UNOBA gives protection at temperatures from below freezing to over 300 degrees F, *regardless of moisture!*

Developed by the manufacturers of T5X—the amazing purple heavy-duty motor oil.

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NEW YORK  
4904 RCA Building

CINCINNATI  
2111 Carew Tower Bldg.

NEW ORLEANS, 917 National Bank of Commerce Building



## UNION OIL COMPANY OF CALIFORNIA

● These fast, positive fire killers are easy to operate, compact, well-balanced and offer extensive maneuverability indoors or outdoors...no extra gadgets protruding or complicated operating parts. The outstanding mechanical breakage feature of C-O-TWO Dry Chemical Type Fire Extinguishers, plus continuous inert gas pressured agitation or fluffing, together with a skillfully blended free flowing dry chemical guarantee lasting, foolproof fire protection. All sizes are rechargeable on-the-scene by anyone...no special tools required.

C-O-TWO Dry Chemical is a finely pulverized powder...non-conducting, non-corrosive, non-abrasive, non-freezing and non-toxic...special compound consists of sodium bicarbonate and other chemicals skillfully blended to render high fire extinguishing qualities, remain free flowing while being used and withstand long periods of storage without deterioration. When brought into contact with fire, C-O-TWO Dry Chemical absorbs a greater part of the heat, decomposes and releases fire killing gases. This heat absorption process acts as an insulating screen for the fire fighter.

Fully approved and built to rigid specifications...C-O-TWO Dry Chemical Type Fire Extinguishers are exceedingly effective on flammable liquid, gas and electrical fires, as well as surface fires involving ordinary combustible materials...rated by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories for class B and C fires.

Convenient 4, 20 and 30 pound hand sizes...no syphon tubes or valves within the cylinder to become clogged or inoperative...discharge hose and squeeze type discharge nozzle remain empty until actuation takes place...one piece removable top assembly.

Also, convenient 150 pound wheeled size...sturdy, wide-faced wheels...discharge hose and two position discharge nozzle having soft or solid stream fully enclosed in protection casing...footrail and dual bar handle provide easy inverting.

Act now for complete free information on these top quality fire extinguishers. Remember...you can't put fire off...fire doesn't wait. Get the facts today!

## FEATURE FOR FEATURE...



## FIRE EXTINGUISHERS

*are your best buy!*



*exclusive inverting design renders constant free flowing dry chemical, assuring faster, more effective and complete discharge*

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# New Trailmobile EP Models

## Haul More Payloads

Aluminum panels, exterior posts, improved suspension characterized Trailmobile's light-weight open and closed top trailers. Simplicity of repair is also featured



*Cut-away view of closed top aluminum trailer, showing post construction, plywood lining detail and frame*

TRAILMOBILE, Inc., has just introduced its new EP (exterior post) model, in both closed-top and open-top designs to fill a demand for a light-weight truck semi-trailer with maximum payload capacity.

As its name implies, side-posts are placed on the outside of the side-wall panels while heavier gage aluminum panels eliminate the need for horizontal corrugations to stiffen the panels against buckling between the posts. The new model provides maximum interior loading capacity. With certain floor combinations, it will be possible to have tandems under 8000 lbs, which permit greater payloads with no sacrifice of strength.

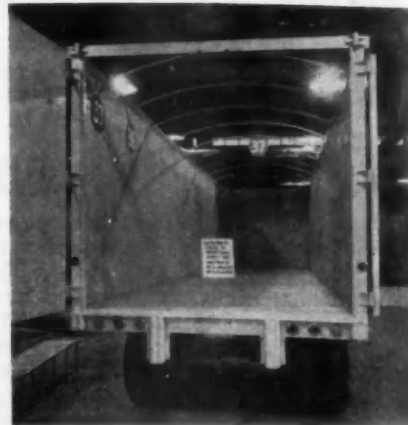
Three types of suspensions are available. These are the single-axle suspension, the standard Trailmobile tandem suspension and the new wide-spread

tandem suspension, which has definite weight advantages in certain states.

The extruded aluminum quarter-panel runs the full length of the trailer. It is practically dent-proof and ties the roof and side sheets firmly together. Roof panels are lock seamed together to provide a one-piece sheet. This construction locks out dust and moisture. Formed steel roof bows give support to the roof sheets and have a well-shaped crown to drain off water.

The side panels are heavy gage, high strength alloy aluminum sheets, 2-ft wide. They are joined by rivets behind the body post and by two rows of rivets at the top and bottom of the rub rail.

Doors are forged, in jigs for uniformity and fit and reinforced. Hinges are cast steel and tough. Locks are recessed with twin handles and positive door locking cam and keeper. Four



*Roof bows on the open top are steel tubing with formed crown to shed water. Larger payloads are possible without deflection*

steel bumpers and overhanging tail shelf give extra dock protection and avoids many broken lights.

Roof bows on the open-top EP model are steel with a high crown. Upper rub rail is formed steel, designed to give maximum strength to the unit. Tie hooks are spaced 24 in. centered around the trailer. The rear header may be swung in either direction or be removed completely for ease in loading or unloading.

Trailmobile understructure with bolsters spaced on 12-in. centers, fifth wheel superstructure with a new stronger fifth wheel plate eliminates all buckling. Bolsters may be removed and new ones put in without touching any part of the structure. Either steel or aluminum bolsters may be specified.

Standard Floor is 1 1/16-in. fir tongue and groove. Kiln dried, rift sawed seasoned lumber is used. This floor will support lift truck axle loadings up to 10,500 lb. Aluminum plate floor is also available.

Heavily constructed, widely flared pick-up plate at front, covers the entire flat section of nose to facilitate angular coupling without damaging front of the trailer. The plate also slants down 2 in. from the nose to the fifth wheel plate to provide easier coupling and uncoupling.

The side door is 3/16-in. aluminum plate reinforced with three extruded sections at the hinges and an extruded moulding completely around the door. Rubber gasket seals out dust and moisture. Doors are equipped with pressure type lock assuring positive closing.



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**HEAVY-DUTY PLUS! Increased detergent action!**  
**Meets military specifications (MIL-0-2104)**

## **Keeps Engines New...longer!**

Exceeds All manufacturers'  
recommendations for All car  
and truck gasoline engines.

**"IT'S TOUGHER THAN YOU'LL EVER NEED!"**

COMMERCIAL CAR JOURNAL, September, 1952

251

## News Reports

Continued from Page 199

### N. Y. Diesel Fuel Tax

New York State Tax Commission regulations effective October 1 make retailer dealers and bulk users responsible for collection of the state's diesel fuel tax, receiving an allowance of 1 per cent of the tax for their services. Individual operators of diesel motor vehicles will be required to register and report diesel fuel purchases, indicating whether the tax has been paid. Before the new amendment, operators paid the tax direct to the Commission.

### NAMBO Meeting

Jack Garrett Scott, Under Secretary of Commerce for Transportation, will be among the speakers at the 23rd annual convention of the National Assn. of Motor Bus Operators at the Drake Hotel in Chicago, Sept. 17-19. Scott is former NAMBO general counsel.

### "Anti-Freeze" Week

October 6 to 13 has been designated as "Anti-Freeze" week according to an announcement from Forest C. Noble, sales manager of DuPont's Zerone and Zerex sales section. Main purpose of the week is to encourage users to have anti-freeze installed early, avoid the rush that follows the first freeze.

### Bus Manpower

According to 1951 figures, latest available, furnished by National Assn. of Motor Bus Operators, the United States has 67,155 employees manning a total fleet of 29,000 intercity buses. Twenty per cent are mechanics, servicemen, repairmen and other maintenance personnel; 22 per cent fill administrative positions such as managers, accountants, dispatchers, clerks, etc.; and the remaining 58 per cent are drivers, instructors, baggagemen and other operating personnel. NAMBO says 10.6 per cent of all employees are women and estimates 9 per cent of administrative employees, 2.7 per cent of the male drivers and 4 per cent of male maintenance men could be replaced by women in an emergency.

(TURN TO PAGE 254, PLEASE)



Oily, greasy dirt deposits on concrete floors are one of the chief causes of early deterioration of floor surfaces. . . . With Magnus Cement Cleaner you can do such a thorough cleaning job with so little labor, that oil and grease damage to concrete surfaces is needless.

**Whiten and Harden the Floors, Too!**  
Magnus Cement Cleaner does a triple job. It cleans. It whitens. It adds hardness to the floor surface.

**For Less Than 4¢ per 100 Sq. Ft.!**

This concentrated cleaner works so fast and so well, with so little need for extensive hand-scrubbing, that the over-all cost is 'way, 'way down. Thousands of garages have used this safe, sure cleaner for more than twenty-five years. And Magnus Cement Cleaner is always sold with a "satisfaction or your money back" guarantee.

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CLEANERS • EQUIPMENT • METHODS

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ECONOMY  
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FINER DECALCOMANIA  
MADE WITH DuPont "DULUX"

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Both "V" TYPE and  
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hand or power hydraulic control  
FOR ALL MOTOR TRUCKS  
FROM 1½ to 10 TONS

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For Trucks or Buildings. Kinneare Rolling Doors open straight up . . . coil out of the way overhead . . . save floor and wall space . . . open and close freely in tightest quarters. All-metal frame gives rugged protection. Motor or manual control. Any size. Write

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You'll also find that these super-efficient HEIN-WERNER Hydraulic Jacks are sturdy and power-packed. They are easy to spot under the vehicle, and are easy to operate. Available in models of  $1\frac{1}{2}$ , 3, 5, 8, 12, 20, 30, 50, and 100 tons capacity. See and inspect them at your own jobber today or write direct.



MODEL E12 9-A  
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The Hein-Werner line of hydraulic jacks is COMPLETE! It includes Under-Axle Jacks for trucks and buses... "Bumper-Lift" Hydraulic Jacks for passenger cars... "Swift Lift" and Service Jacks for shop use... "Push and Pull" Hydraulic Jacks for body, fender and framework.



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Snyder "Balanced Construction" design, insures lighter weight, streamlined yet stronger tanks...

Tanks built to stand heavy loads, high speeds and the shock of the road. The Snyder safety diesel tank has all the safety and construction features of the gasoline tank and is equipped with larger outlets to accommodate the heavier fuel lines.

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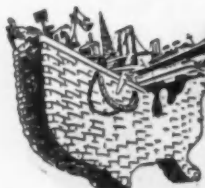
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DIESEL  
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BUTANE

ALL LIQUID OR GASEOUS FUELS

## News Reports

Continued from Page 252

### TBEA Program

Harry Moock, Chrysler Corp. Conference of Business Management, and Chase Morsey, Products Planning Department manager, Ford Division, Ford Motor Co., will be among the headline speakers at the annual convention and exhibit of the Truck Body and Equipment Assn. to be held Sept. 15-17 at the Chase Hotel, St. Louis, Mo.

### Safety Manual

The 1952 revision of Pennsylvania State College Institute of Public Safety's "Driver Training and Accident Prevention" manual has been made available to truck and bus operators in limited quantity. Request your copies, at \$3 each, from the Institute of Public Safety, Pennsylvania State College, State College, Pa.

### Consulting Service

George M. Bunn & Associates, Norristown, Pa., have set up a consulting service for manufacturers and truck operators in the field of design, operation and maintenance of trucks, trailers and allied equipment.

END

Please Resume Reading Page 37

### CLASSIFIED ADVERTISEMENTS

Truck distributorship established in 1946 available in Little Rock, Arkansas. Territory includes 57 counties in Arkansas, one in Texas. Good factory quota available. Death of corporation president necessitates this sale. Will sacrifice going business. Will lease new building built for this business at reasonable rate. Write O. R. Thomas, 900 East Third, Little Rock, Ark.

INDEPENDENT SALESMEN to Fleet Owners, from Massachusetts to Virginia, west to Ohio. We have 3 exclusive, outstanding products, 2 of them well established and widely used. Consistent records. Substantial commission. Exclusive territory. No objection to non-conflicting present line. Give full information on territory and lines. Ste Dee Co., Lynbrook, N. Y.

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For all cars, trucks, buses,  
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Send in your old units

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FOR HEAVY DUTY

**WOLF'S HEAD**  
MOTOR OIL AND LUBES  
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Refrigerated  
TRUCK BODIES

*Insure*

PERISHABLE  
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# The November Issue of COMMERCIAL CAR JOURNAL Is The Annual Directory Issue

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In it you will find, as always, the only directory of automotive products compiled exclusively for fleet operators—listing only those products which are of interest to fleet operators.

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The November issue of Commercial Car Journal is the most convenient buying guide for fleetmen.

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NBP

*.....Automotive Headquarters.....*



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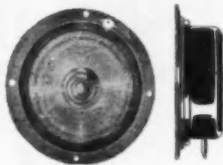
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Approved in all states requiring approval.  
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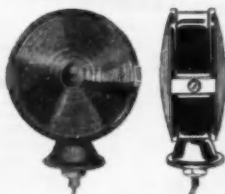
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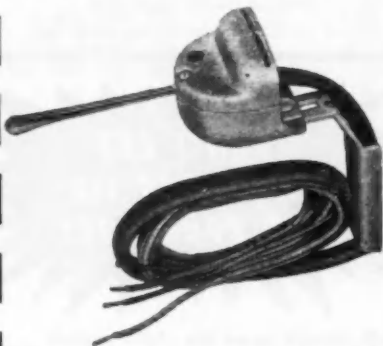
(Model 664)

Semi-flush mount. Red or amber lenses.



(Model 650)

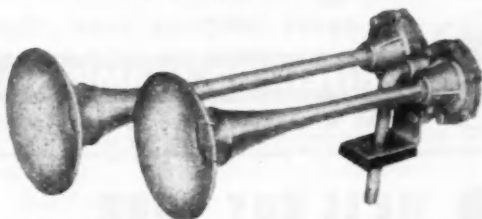
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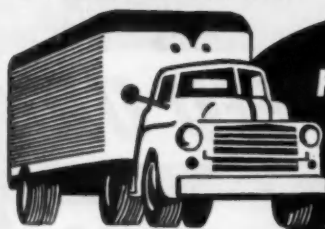
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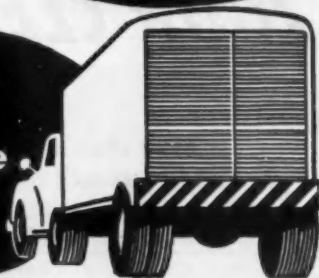
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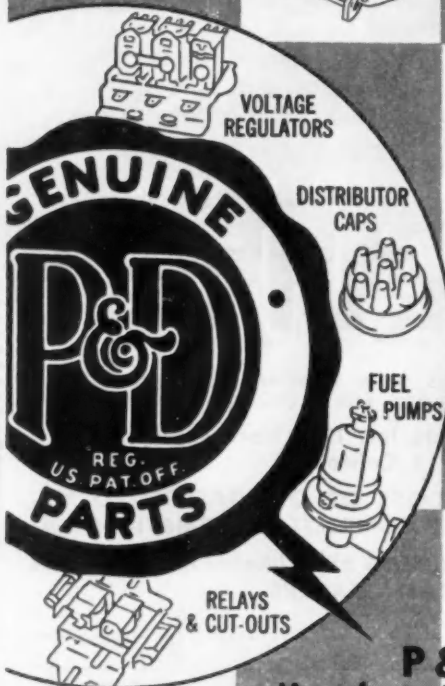
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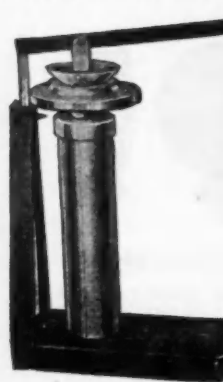


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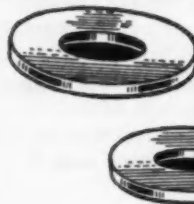
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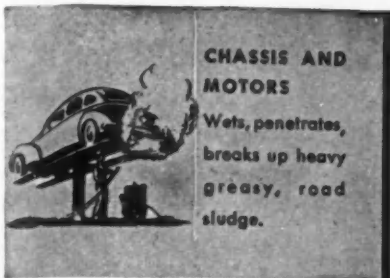
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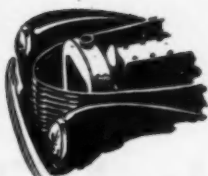
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Built-in Pressure Release ... No flooding ... Assures satisfactory Re-Starts on Hottest Days

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**Performance Proven.** Years of research, development, and rigorous tests have been made on this pump.

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**Low Power Requirements.** Only 7 watts at maximum fuel delivery.

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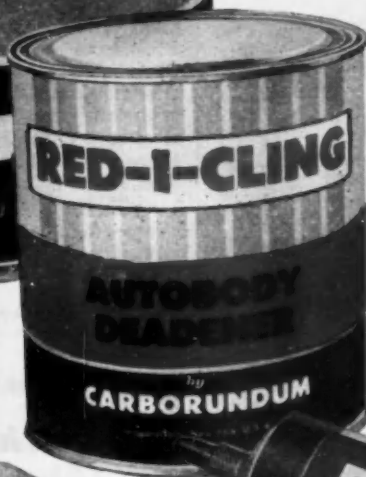
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The fulcrum of lifting arms, anchored at four points, exerts powerful elevating leverage effecting movement of load to any height, with steady action at correct angle, minimizing stress and strain.

### PROPER BALANCE IS ESSENTIAL

Due to structural design, weight of load, when suspended, is distributed equally to all points of bottom frame, eliminating possibility of tipping or falling off.

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Safety valve lever has been placed near handle at top, making it readily accessible to operator in standing position.



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Garrison Booster installed on GMC truck. Photo shows left side view of junction block, valve-in-drag-link, hose and fittings.

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Manufacturing Co.

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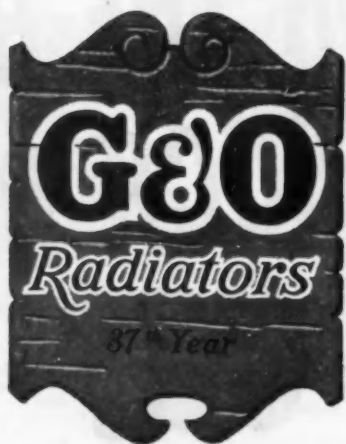


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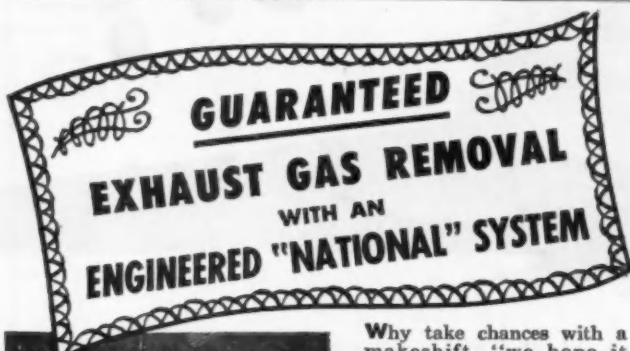
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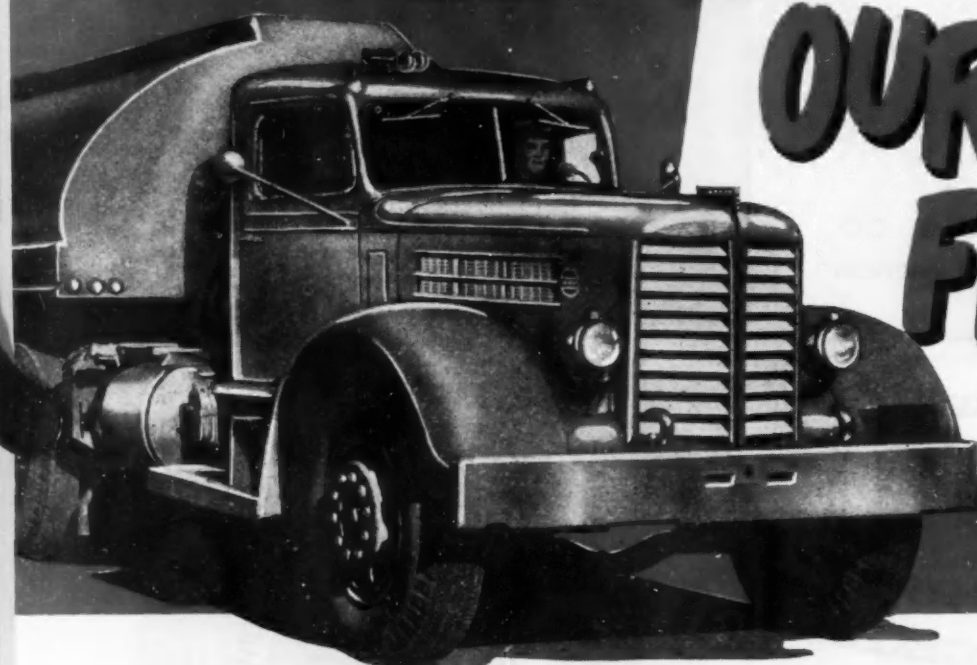
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Write for complete facts. Tell us number and style of trucks in which seats are to be used.



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**Kingham**  
COMBINATION  
ALUMINUM  
& HI-TEN STEEL  
Trailers

**6650 lbs.**  
30' single axle unit



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SERVICE

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NEW Kingham exterior post, Aluminum and Hi-Ten Steel Trailer.  
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For the lightest and the toughest compared to any other trailer with comparable basic speci-  
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A UNITED MOTORS LINE

**DISTRIBUTED BY WHOLESALERS EVERYWHERE**





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check these 4 Big Reasons why  
it will pay you to standardize on

## Willard

*-for Dependability  
-for Lowest Cost-per-Mile!*



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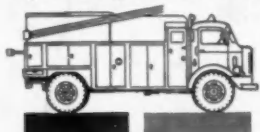
**WILLARD STORAGE BATTERY COMPANY**

FACTORIES IN: CLEVELAND • LOS ANGELES • DALLAS • MEMPHIS • PORTLAND • ALLENTOWN • TORONTO

# Advantages like these help you Speed Line Work!

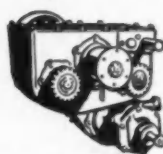
For Construction or Maintenance . . . Only FWD . . . the true 4x4 has all these features

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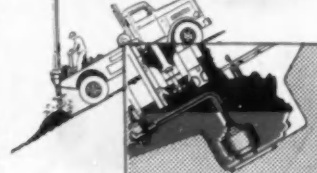
Only a true 4x4 gives you up to 50% of the weight on the front wheels. This gives you the extra traction needed to speed utility line work.

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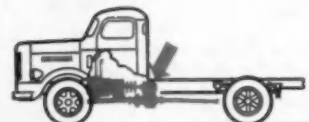
Utilizes full engine power through all transmission speeds. Exclusive safety lock prevents truck drive while boring.

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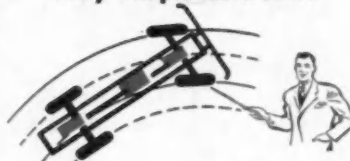
Keeps oil pump constantly submerged. An FWD exclusive that lets you bore holes, set poles on steepest grades.

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Doubles the number of transmission gear ratios. Provides low gear ratio for full power at extreme low speeds in tough, cross-country operations.

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